

Pubmed数据库检索与利用



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复旦大学医科图书馆



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二、基本规则



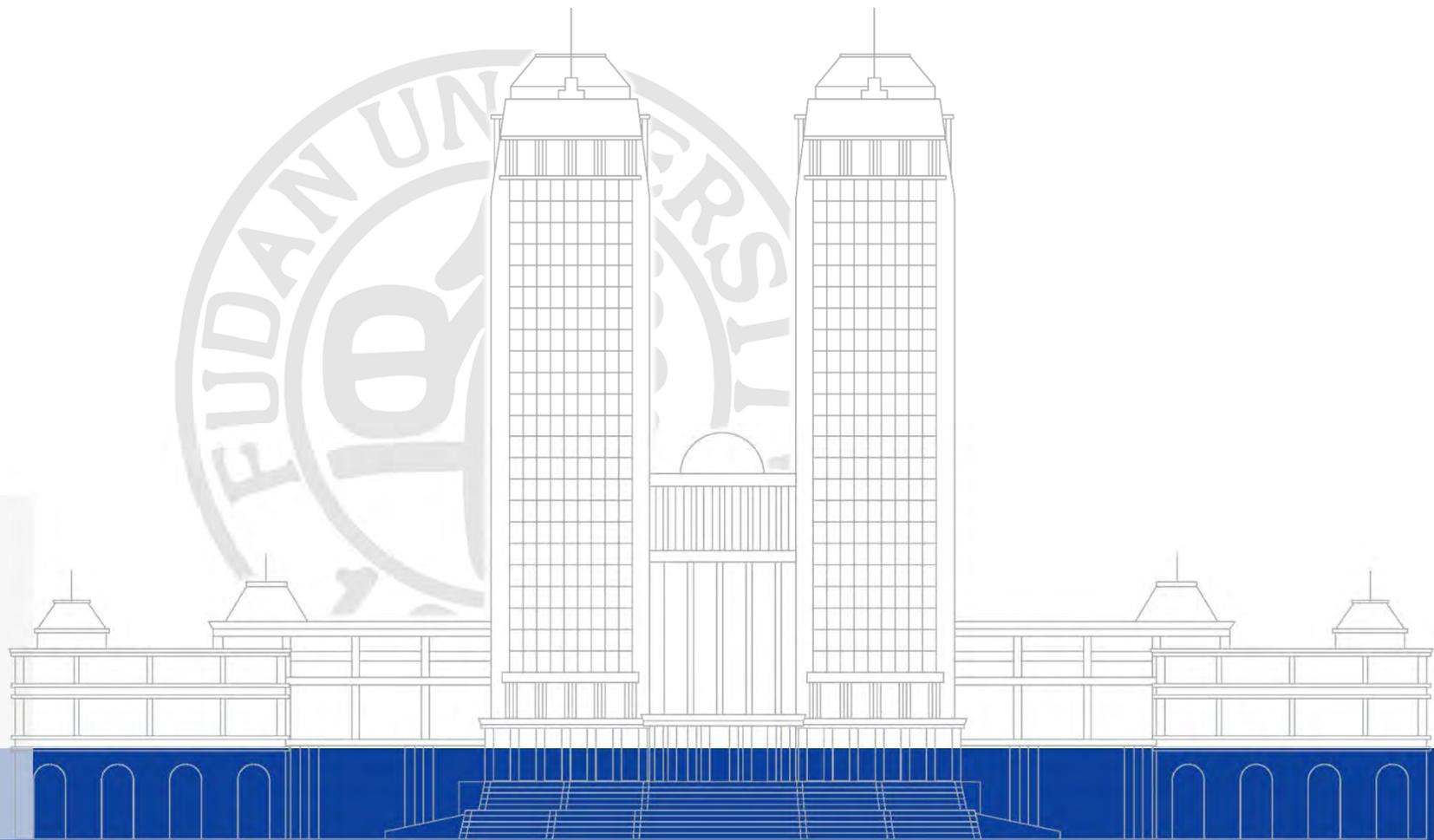
三、检索与利用



四、其他...



01



Pubmed简介

1.1 简介

- Pubmed是美国国立医学图书馆(NLM)所属的国家生物技术信息中心(NCBI)于2000年4月开发的基于WEB的**免费**的**MEDLINE**检索系统。
- MEDLINE
- PubMed Central (PMC)
- Bookshelf
- <http://www.pubmed.gov>
- <http://www.ncbi.nlm.nih.gov/pubmed/>



1.2 数据来源

- **MEDLINE**是美国国立医学图书馆生产的国际性综合生物医学信息书目数据库，是当前国际上最权威的生物医学文献数据库。
- **MEDLINE (1966~至今)**
 - 收录了全世界70多个国家和地区1940年以来的9000余种生物医学期刊（其中约1600种免费期刊），英文刊物约占90%；75%的文献有英文摘要，每天更新。
 - 内容涉及：医学、药学、牙医学、护理学、卫生保健、兽医学等专业。
- pubmed每天都在不断地接受出版商发送的新数据，其文献条目在标引加工后每天向MEDLINE移动一次。但其中有些条目由于超出了MEDLARS数据库的收录范围，将永远不会被PreMEDLINE或MEDLINE条目所取代，例如在综合性的科学杂志（Science或Nature）上发表的地理学文章等。
- **OldMedline(1951~1965)**
 - 未标引的数据



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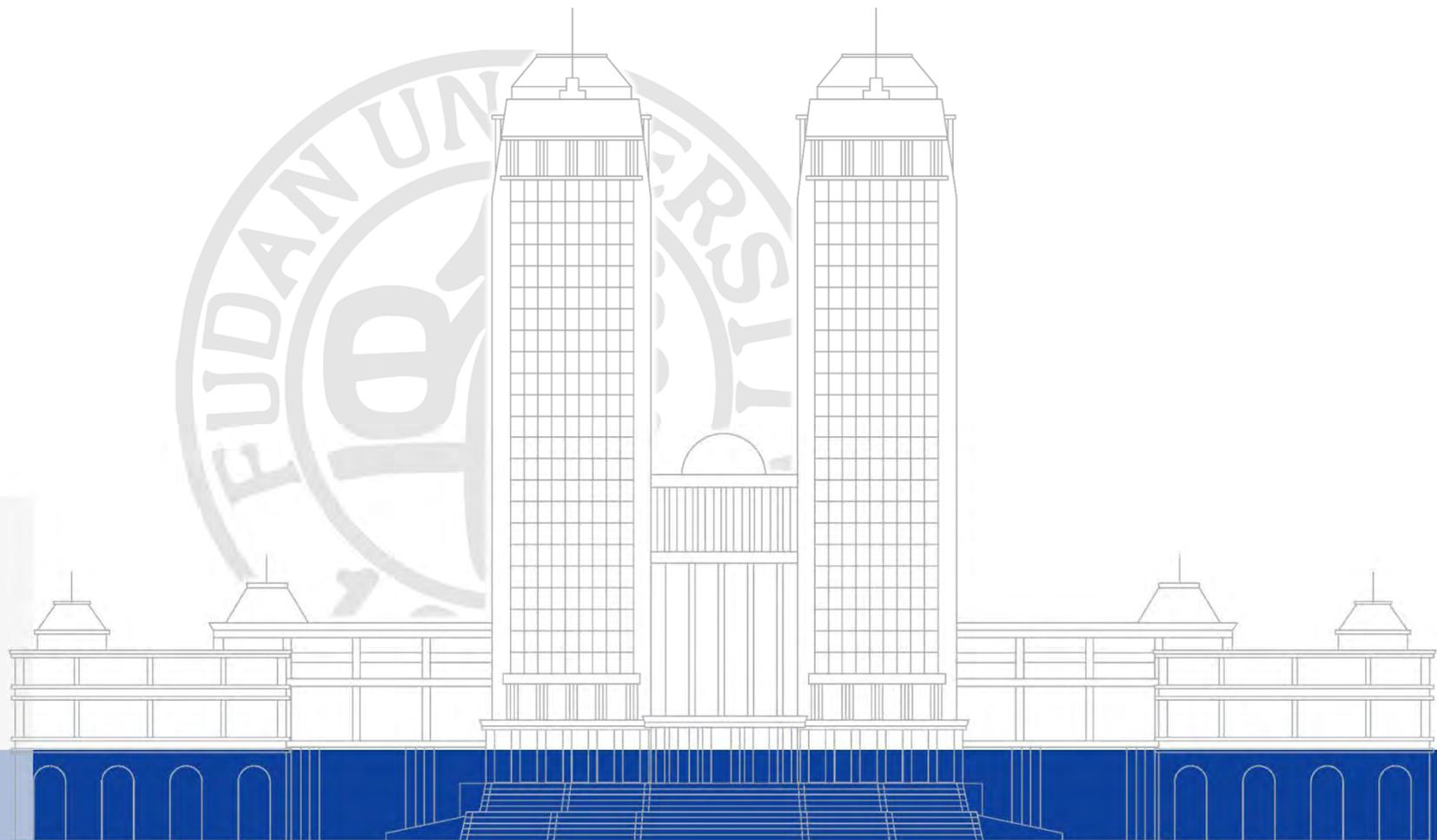
E-utilities API
FTP
Batch Citation Matcher



Explore

MeSH Database
Journals

02



基本规则



2.1 记录字段和格式

Send to

Format: Abstract ▾

出处

Ultrasonography, 2019 Jan 4. doi: 10.14366/usg.18053. [Epub ahead of print]

题目

Future of breast elastography.

作者

Barr RG^{1,2}

⊕ Author information

摘要

Abstract

Both strain elastography and shear wave elastography have been shown to have high sensitivity and specificity for characterizing breast lesions as benign or malignant. Training is important for both strain and shear wave elastography. The unique feature of benign lesions measuring smaller on elastography than B-mode imaging and malignant lesions appearing larger on elastography is an important feature for characterization of breast masses. There are several artifacts which can contain diagnostic information or alert to technique problems. Both strain and shear wave elastography continue to have improvements and new techniques will soon be available for clinical use that may provide additional diagnostic information. This paper reviews the present state of breast elastography and discusses future techniques that are not yet in clinical practice.

关键词

KEYWORDS: Breast; Breast neoplasms; Elasticity imaging techniques; Shear wave; Strain; Strain ratio

PMID: 30884636 DOI: [10.14366/usg.18053](https://doi.org/10.14366/usg.18053)

Free full text



2.1 字段标识符

Affiliation [ad]	Full Investigator Name [fir]	Pagination [pg]
All Fields [all]	Grant Number [gr]	Personal Name as Subject [ps]
Article Identifier [aid]	Investigator [ir]	Pharmacological Action [pa]
Author [au]	ISBN [isbn]	Place of Publication [pl]
Author Identifier [auid]	Issue [ip]	PMCID and MID
Book [book]	Journal [ta]	PMID [pmid]
Comment Correction Type	Language [la]	Publication Date [dp]
Completion Date [dcom]	Last Author Name [lastau]	Publication Type [pt]
Conflict of Interest Statement [cois]	Location ID [lid]	Publisher [pubn]
Corporate Author [cn]	MeSH Date [mhda]	Secondary Source ID [si]
Create Date [crdt]	MeSH Major Topic [majr]	Subset [sb]
EC/RN Number [rn]	MeSH Subheadings [sh]	Supplementary Concept [nm]
Editor [ed]	MeSH Terms [mh]	Text Words [tw]
Entry Date [edat]	Modification Date [lr]	Title [ti]
Filter [filter] [sb]	NLM Unique ID [jid]	Title/Abstract [tiab]
First Author Name [1au]	Other Term [ot]	Transliterated Title [tt]
Full Author Name [fau]	Owner	Volume [vi]



2.3 关键词

- 作者提供的从篇名、文摘、全文中直接抽取的表达文献主题内容的词语。
- 特点：未经规范处理的自然检索语言，能及时反映新观点，新方法，新发现及新术语。
- 缺点：用词不统一，易漏检



2.4 主题词

- 对同一概念的同义词、近义词进行“规范”化，保证词语和概念的一一对应。
- 特点：规范化、统一化
- 优点：提高查全率和查准率，便于调整检索范围，能限定文献的主题概念。可以集中语言表达不同但概念相同的文献，一般情况下，命中的文献比关键词更准确全面。



主题词和关键词的关系

Cancer
Neoplasms
Tumor

} Neoplasms

关键词 主题词

- > Breast Neoplasms* / drug therapy
- > Carcinoma, Hepatocellular* / drug therapy
- > Carcinoma, Squamous Cell* / drug therapy
- > Leukemia, Myeloid, Acute* / drug therapy
- > Neoplasms, Germ Cell and Embryonal* / drug therapy
- > Adenocarcinoma* / drug therapy

1 The interaction of financial toxicity and social support on social functioning in post-chemotherapy breast cancer patients: a cross-sectional study.
Cite: Lin L, Chen Q, Lai F, Guo D, Wang J, Tian L.
Support Care Cancer. 2023 Sep 20;31(10):583. doi: 10.1007/s00520-023-08048-z.
Share: PMID: 37728783

2 Prognostic significance of psoas muscle index in male hepatocellular carcinoma patients treated with immune checkpoint inhibitors and tyrosine kinase inhibitors.
Cite: Luo N, Li H, Luo Y, Hu P, Liang L, Zhang R, Zhang D, Cai D, Kang J.
Hum Vaccin Immunother. 2023 Aug;19(2):2258567. doi: 10.1080/21645515.2023.2258567. Epub 2023 Sep 20.
Share: PMID: 37728115

3 Evaluating atezolizumab in patients with urinary tract squamous cell carcinoma (AURORA): study protocol for a single arm, open-label, multicentre, phase II clinical trial.
Cite: Crabb S, Wickens R, Jane-Bibby S, Dunkley D, Lawrence M, Knight A, Jones R, Birtle A, Huddart R, Linch M, Martin J, Coleman A, Boukas K, Markham H, Griffiths G.
Share: BMC Cancer. 2023 Sep 19;23(1):885. doi: 10.1186/s12885-023-11397-x.
PMID: 37726695 Free PMC article.

4 ABCC1 and glutathione metabolism limit the efficacy of BCL-2 inhibitors in acute myeloid leukemia.
Cite: Ebner J, Schmoeller J, Piontek M, Manhart G, Troester S, Carter BZ, Neubauer H, Moriggl R, Szakács G, Zuber J, Köcher T, Andreeff M, Sperr WR, Valent P, Grebien F.
Share: Nat Commun. 2023 Sep 19;14(1):5709. doi: 10.1038/s41467-023-41229-2.
PMID: 37726279 Free PMC article.

5 Mitochondrial metabolism-related signature depicts immunophenotype and predicts therapeutic response in testicular germ cell tumors.
Cite: Qiu D, Gao L, Zhang S, Lin G, Yu X.
Share: Medicine (Baltimore). 2023 Sep 15;102(37):e35120. doi: 10.1097/MD.00000000000035120.
PMID: 37713839 Free PMC article.

6 Real time ex vivo chemosensitivity assay for pancreatic adenocarcinoma.
Cite: Kim DW, Beato F, Kim Y, Tassielli AF, Dai R, Denbo JW, Hodul PJ, Malafa MP, Fleming JB.

2.5 医学主题词表

- 目前最权威最常用的标准医学主题词表，动态变化。2万多个词和词组。
- 通过注释、参照系统与树形编码，表达MeSH词的历史变迁、主题词的族性类别、属分关系、揭示主题词之间语义关系
- 对医学文献中的自然语言进行规范，使概念与主题词单一对应。
- 保证文献的标引者和检索者之间在用词上的一致。
- 可进行主题词、副主题词组配，提高主题标引或检索的专指度
- 可以对主题词进行扩检和缩检
- <https://www.nlm.nih.gov/mesh/>
- <https://www.nlm.nih.gov/mesh/meshhome.html>





Welcome to Medical Subject Headings

The Medical Subject Headings (MeSH) thesaurus is a controlled and hierarchically-organized vocabulary produced by the National Library of Medicine. It is used for indexing, cataloging, and searching of biomedical and health-related information. MeSH includes the subject headings appearing in MEDLINE/PubMed, the NLM Catalog, and other NLM databases.

Recent MeSH Updates

Visit our [Annual MeSH Processing \(AMP\)](#) page to see all recent MeSH developments including the most recent ones listed below

- 2025 MeSH files are now in production
 - MeSH Browser now displays [2024](#) and [2025 MeSH](#) vocabularies
 - Reports of MeSH changes now appear on our [Annual MeSH Processing \(AMP\)](#) page
 - All 2024 MeSH files are now available on the [MeSH Download Page](#)
 - 2025 MeSH files will be available in December 2024
- [MeSH in Resource Description Format\(RDF\)](#)
 - [MeSH RDF FTP](#) now contain 2025 MeSH in RDF format
 - An [open MeSH API](#) is available for retrieving MeSH data
 - You can also use our [SPARQL query editor](#) for querying MeSH data

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- [Access RDF MeSH Data](#)
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 - [PubMed® Online Training](#)

Related MeSH Efforts

- [RxNorm](#): A drug vocabulary used for e-prescribing, formulary, medication history, government reporting, drug compendia mapping, and other uses
- [Daily Med](#): Provides trustworthy information about marketed drugs in the United States
- [Unified Medical Language System \(UMLS®\) Metathesaurus](#): A collection of biomedical names and codes grouped as sets of synonyms, derived from over 150 medical vocabulary sources.
- [NLM Classification](#): A NLM vocabulary used for the arrangement of library materials in the field of medicine and related sciences.



Mesh表的结构

MeSh

- 字 顺 表 (Alphabetic List)
- 树 状 结 构 表 (Tree Structure)
- 副 主 题 词 表 (Subheadings)
- 主 题 词 变 更 表





SHOCK	休克
SHOCK, CARDIOGENIC	休克, 心源性
SHOCK, HEMORRHAGIC	休克, 出血性
SHOCK, SEPTIC	休克, 败血症性
SHOCK, TRAUMATIC	休克, 创伤性

主题词倒置的优点: 突出核心词

方便选词

族性检索



树状结构表（Categories and Subcategories）

又叫范畴表，树形结构表用以体现主题词概念间的关系，该表将2万多个主题词按其学科性质、词义范围、上下类属、派生关系，划分为16个大类；每个大类按再划分为若干二级类目、三级类目、……最多可达九级类目。

主题词用逐级缩格的排列方法来表达它们之间的逻辑隶属关系，同级类目下的主题词按字顺编排。

- 作用：从学科分枝的角度选择主题词，满足族性检索的要求。





Medical Subject Headings 2025

The files are updated each week day Monday-Friday by 8AM EST

FullWord ▾

Exact Match

All Fragments

Any Fragment

- All Terms
- Main Heading (Descriptor) Terms
 - Qualifier Terms
 - Supplementary Concept Record Terms
- MeSH Unique ID
- Search in all Supplementary Concept Record Fields
 - Heading Mapped To
 - Indexing Information
- Pharmacological Action
- Search Related Registry and CAS Registry/EC Number/UNII Code/NCBI Taxonomy ID Number (RN)
 - Related Registry Search
 - CAS Registry/EC Number/UNII Code/NCBI Taxonomy ID Number (RN)
- Search in all Free Text Fields
 - Annotation
 - ScopeNote
 - SCR Note

Sort by: Relevance ▾

Results per Page: 20 ▾

Anatomy [A] +

Organisms [B] +

Diseases [C] +

Chemicals and Drugs [D] +

Analytical, Diagnostic and Therapeutic Techniques, and Equipment [E] +

Psychiatry and Psychology [F] +

Phenomena and Processes [G] +

Disciplines and Occupations [H] +

Anthropology, Education, Sociology, and Social Phenomena [I] +

Technology, Industry, and Agriculture [J] +

Humanities [K] +

Information Science [L] +

Named Groups [M] +

Health Care [N] +

Publication Characteristics [V] +

Geographicals [Z] +

Neoplasms [C04]

Neoplasms by Histologic Type [C04.557]

Neoplasms, Glandular and Epithelial [C04.557.470]

Adenoma [C04.557.470.035] +

Carcinoma [C04.557.470.200] +

Neoplasms, Adnexal and Skin Appendage [C04.557.470.550] +

Neoplasms, Basal Cell [C04.557.470.565] +

Neoplasms, Cystic, Mucinous, and Serous [C04.557.470.590] +

Neoplasms, Ductal, Lobular, and Medullary [C04.557.470.615] +

Neoplasms, Fibroepithelial [C04.557.470.625] +

Neoplasms, Mesothelial [C04.557.470.660] +

Neoplasms, Neuroepithelial [C04.557.470.670] +

Neoplasms, Squamous Cell [C04.557.470.700] +

Organisms [B] +

Diseases [C] -

Infections [C01] +

Neoplasms [C04] +

Musculoskeletal Diseases [C05] +

Digestive System Diseases [C06] -

Biliary Tract Diseases [C06.130] +

Digestive System Abnormalities [C06.198] +

Digestive System Fistula [C06.267] +

Digestive System Neoplasms [C06.301] +

Gastrointestinal Diseases [C06.405] +

Liver Diseases [C06.552] -

alpha 1-Antitrypsin Deficiency [C06.552.074]

Chemical and Drug Induced Liver Injury [C06.552.100] +

Cholestasis, Intrahepatic [C06.552.150] +

Fatty Liver [C06.552.241] +

Focal Nodular Hyperplasia [C06.552.270]

Hepatic Infarction [C06.552.289]

Hepatic Insufficiency [C06.552.308] +

Budd-Chiari Syndrome [C06.552.347]

Hepatic Veno-Occlusive Disease [C06.552.360]

Hepatitis [C06.552.380] -

Hepatitis, Alcoholic [C06.552.380.290]

Hepatitis, Animal [C06.552.380.315] +

Hepatitis, Chronic [C06.552.380.350] +

Hepatitis, Viral, Human [C06.552.380.705] -

Hepatitis A [C06.552.380.705.422]

Hepatitis B [C06.552.380.705.437] -

Hepatitis B, Chronic [C06.552.380.705.437.100]

Hepatitis C [C06.552.380.705.440] +

Hepatitis D [C06.552.380.705.450] +

Hepatitis E [C06.552.380.705.470]

Skin Diseases, Infectious [C01.800] +

Soft Tissue Infections [C01.820]

Suppuration [C01.830] +

Toxemia [C01.861] +

Urinary Tract Infections [C01.915] +

Vaccine-Preventable Diseases [C01.918]

Vector Borne Diseases [C01.920] +

Virus Diseases [C01.925] -

Arbovirus Infections [C01.925.081] +

Bronchiolitis, Viral [C01.925.109]

Central Nervous System Viral Diseases [C01.925.182] +

DNA Virus Infections [C01.925.256] -

Adenoviridae Infections [C01.925.256.076] +

African Swine Fever [C01.925.256.142]

Circoviridae Infections [C01.925.256.200] +

Hepadnaviridae Infections [C01.925.256.430] -

Hepatitis B [C01.925.256.430.400] +

Herpesviridae Infections [C01.925.256.466] +

Papillomavirus Infections [C01.925.256.650] +

Parvoviridae Infections [C01.925.256.700] +

Polyomavirus Infections [C01.925.256.721] +

Poxviridae Infections [C01.925.256.743] +

Eye Infections, Viral [C01.925.325] +

Fatigue Syndrome, Chronic [C01.925.330]

Hepatitis, Viral, Animal [C01.925.407] +

Hepatitis, Viral, Human [C01.925.440] -

Hepatitis A [C01.925.440.420]

Hepatitis B [C01.925.440.435] -

Hepatitis B, Chronic [C01.925.440.435.100]

Hepatitis C [C01.925.440.440] +

Hepatitis D [C01.925.440.450] +

Hepatitis E [C01.925.440.470]

Opportunistic Infections [C01.925.597] +

Pneumonia, Viral [C01.925.705] +

Hepatitis B MeSH Descriptor Data 2022

Details

Qualifiers

MeSH Tree Structures

Concepts

MeSH Heading	Hepatitis B
Tree Number(s)	C01.221.250.500 C01.925.256.430.400 C01.925.440.435 C06.552.380.705.437
Unique ID	D006509
RDF Unique Identifier	http://id.nlm.nih.gov/mesh/D006509
Annotation	chronic = HEPATITIS B, CHRONIC
Scope Note	INFLAMMATION of the LIVER in humans caused by a member of the ORTHOHEPADNAVIRUS genus, HEPATITIS B VIRUS. It is primarily transmitted by parenteral exposure, such as transfusion of contaminated blood or blood products, but can also be transmitted via sexual or intimate personal contact.
Entry Term(s)	Hepatitis B Virus Infection
NLM Classification #	WC 536
Public MeSH Note	77; was HEPATITIS, HOMOLOGOUS SERUM 1963-76
Online Note	use HEPATITIS B to search HEPATITIS, HOMOLOGOUS SERUM 1966-76
History Note	77; was HEPATITIS, HOMOLOGOUS SERUM 1963-76
Date Established	1977/01/01
Date of Entry	1999/01/01
Revision Date	2020/05/27



Hepatitis B MeSH Descriptor Data 2022

Details **Qualifiers** MeSH Tree Structures Concepts

Allowable Qualifiers

blood (BL)
cerebrospinal fluid (CF)
chemically induced (CI)
classification (CL)
complications (CO)
congenital (CN)
diagnosis (DI)
diagnostic imaging (DG)
diet therapy (DH)
drug therapy (DT)
economics (EC)
embryology (EM)
enzymology (EN)
epidemiology (EP)
ethnology (EH)
etiology (ET)
genetics (GE)
history (HI)
immunology (IM)
metabolism (ME)
microbiology (MI)
mortality (MO)

nursing (NU)
parasitology (PS)
pathology (PA)
physiopathology (PP)
prevention & control (PC)
psychology (PX)
radiotherapy (RT)
rehabilitation (RH)
surgery (SU)
therapy (TH)
transmission (TM)
urine (UR)
veterinary (VE)
virology (VI)





Hepatitis B MeSH Descriptor Data 2022

Details

Qualifiers

MeSH Tree Structures

Concepts

Infections [C01]

Communicable Diseases [C01.221]

Blood-Borne Infections [C01.221.250]

Hepatitis B [C01.221.250.500]

Hepatitis B, Chronic [C01.221.250.500.100]

Hepatitis C [C01.221.250.750]

HIV Infections [C01.221.250.875]

Infections [C01]

Virus Diseases [C01.925]

DNA Virus Infections [C01.925.256]

Hepadnaviridae Infections [C01.925.256.430]

Hepatitis B [C01.925.256.430.400]

Hepatitis B, Chronic [C01.925.256.430.400.100]

Infections [C01]

Virus Diseases [C01.925]

Hepatitis, Viral, Human [C01.925.440]

Hepatitis A [C01.925.440.420]

Hepatitis B [C01.925.440.435]

Hepatitis B, Chronic [C01.925.440.435.100]

Hepatitis C [C01.925.440.440]

Hepatitis D [C01.925.440.450]

Hepatitis E [C01.925.440.470]

Digestive System Diseases [C06]

Liver Diseases [C06.552]

Hepatitis [C06.552.380]

Hepatitis, Viral, Human [C06.552.380.705]

Hepatitis A [C06.552.380.705.422]

Hepatitis B [C06.552.380.705.437]

Hepatitis B, Chronic [C06.552.380.705.437.100]

Hepatitis C [C06.552.380.705.440]

Hepatitis D [C06.552.380.705.450]

Hepatitis E [C06.552.380.705.470]



副主题词 (Subheadings/Qualifiers)

- 直接加在主题词之后，与主题词组配使用，对主题词起修饰和限定的作用，使主题词具有更高的专指性的一类词。
- 副主题词是限定主题概念的规范化词汇，对主题词起细分作用或揭示多个主题词之间的关系
- 副主题词没有独立的检索意义，其作用是增加主题概念的专指性，提高检索效率。
- 副主题词现有76个。



主题词与副主题词的组配规则

- 主题词与副主题词的组配有严格的规定，不是所有的副主题词均能与每个主题词进行组配。计算机数据库中在每个主题词下都列出了当前主题词可以组配的所有副主题词。
- 有专指副主题词，勿用泛指副主题组配。如：药物治疗、饮食治疗
- 若能用主题词与副主题组配，尽量不要用与副主题词等义的主题词。

如:肝炎/药物治疗 不能：肝炎 AND 药物治疗

- 在检索中，主题词/副主题词两者间须有必然的逻辑关系，善于分析两者之间的关系：因果关系、应用关系等
 - 眼结核引起失明，用结核，眼/并发症；盲/病因学
 - 牛奶引起动脉硬化，用牛奶/副作用，动脉硬化/病因学
 - 阿司匹林治疗感冒，用阿司匹林 /治疗应用；感冒/药物疗法



MeSH Qualifiers List

Click on Qualifier to reveal details in the MeSH Browser

- [analysis](#)
 - blood
 - cerebrospinal fluid
 - isolation & purification
 - urine
- [anatomy & histology](#)
 - blood supply
 - cytology
 - ultrastructure
 - embryology
 - abnormalities
 - innervation
 - pathology
- [chemistry](#)
 - agonists
 - analogs & derivatives
 - antagonists & inhibitors
 - chemical synthesis
- [diagnosis](#)
 - diagnostic imaging
- [etiology](#)
 - chemically induced
 - complications
 - secondary

- [pharmacology](#)
 - administration & dosage
 - adverse effects
 - poisoning
 - toxicity
 - agonists
 - antagonists & inhibitors
 - pharmacokinetics
- [physiology](#)
 - genetics
 - growth & development
 - immunology
 - metabolism
 - biosynthesis
 - blood
 - cerebrospinal fluid
 - deficiency
 - enzymology
 - pharmacokinetics
 - urine
 - physiopathology
- [statistics & numerical data](#)
 - epidemiology
 - ethnology
 - mortality
 - supply & distribution
- [therapeutic use](#)
 - administration & dosage
 - adverse effects
 - poisoning

- [therapy](#)
 - diet therapy
 - drug therapy
 - nursing
 - [prevention & control](#)
 - radiotherapy
 - rehabilitation
 - surgery
 - transplantation
- [classification](#)
- [drug effects](#)
- [education](#)
- [ethics](#)
- [history](#)
- [injuries](#)
- [instrumentation](#)
- [methods](#)
- [pathogenicity](#)
- [psychology](#)
- [radiation effects](#)
- [veterinary](#)

MeSH Qualifiers with Scope Notes

Listed below are MeSH Topical Qualifiers listed by Name, Abbreviation, and Short Form. Each Qualifier is defined by a Scope Note that provides guidance on how it should be used.

Name	Abbreviation	Short Form	Scope Notes
Abnormalities	AB	ABNORM	Used with organs for congenital defects producing changes in the morphology of the organ. It is used also for abnormalities in animals.
Administration & Dosage	AD	ADMIN	Used with drugs for dosage forms, routes of administration, frequency and duration of administration, quantity of medication, and the effects of these factors.
Adverse Effects	AE	ADV EFF	Used with drugs, chemicals, or biological agents in accepted dosage - or with physical agents or manufactured products in normal usage - when intended for diagnostic, therapeutic, prophylactic, or anesthetic purposes. It is used also for adverse effects or complications of diagnostic, therapeutic, prophylactic, anesthetic, surgical, or other procedures.
Agonists	AG	AGON	Used with chemicals, drugs, and endogenous substances to indicate substances or agents that have affinity for a receptor and intrinsic activity at that receptor. (From Textbook of Pharmacology, 1991, p.16)
Analogs & Derivatives	AA	ANALOGS	Used with drugs and chemicals for substances that share the same parent molecule or have similar electronic structure but differ by the addition or substitution of other atoms or molecules. It is used when the specific chemical heading is not available and no appropriate group heading exists.
Analysis	AN	ANAL	Used for the identification or quantitative determination of a substance or its constituents and metabolites; includes the analysis of air, water, or other environmental carrier. It excludes the chemical analysis of tissues, tumors, body fluids, organisms, and plants for which "chemistry" is used. The concept applies to both methodology and results. For analysis of substances in blood, cerebrospinal fluid, and urine the specific subheading designating the fluid is used.
Anatomy & Histology	AH	ANAT	Used with organs, regions, and tissues for normal descriptive anatomy and histology, and for the normal anatomy and structure of animals and plants.
Antagonists & Inhibitors	AI	ANATAG	Used with chemicals, drugs, and endogenous substances to indicate substances or agents which counteract their biological effects by any mechanism.
Biosynthesis	BI	BIOSYN	Used for the anabolic formation of chemical substances in organisms, in living cells, or by subcellular fractions. Used for the presence or analysis of substances in the blood; also for examination of, or changes in, the blood in

2.6 检索规则-词汇自动转换

1. MeSH Translation table

- 医学主题词
- 副主题词
- 出版类型
- 款目词
- 统一医学语言系统
- 增补概念词和同义词

作用：将不规范的词语转换成规范的用词，对主题词进行自动扩展检索，使检索结果更准确，全面。





2. Journals Translation table

包括刊名全称、缩写和ISSN号。该转换表能把键入的刊名全称转换为“MEDLINE的标准缩写+[Journal Name]”后进行检索。

- New England journal of medicine 转换为 “N Engl J Med”[Journal]
- Clin Lung Cancer. 2010 Jan;11(1):51-6 转换为: "Clin Lung Cancer"[Journal] AND 2010[PDAT] AND 11[VOL] AND 1[ISS] AND 51-6[PAGE]





3. Full Author Translation table

2002年以来发表的带有作者全名的文献

作者姓名可以采用正常的或倒置的

(Julia s wong/wong Julia s/wong, Julia s)

4. Full Investigator Translation table

5. Author index

姓在前，名在后，首字母缩写 o'bren jm adams sh

1966-1984 不限制 1984-1995：前10个作者

1996-2000:25个作者 2000-：不限制

1990前：小语种/日语所有作者名字转成Roman alphabet

1990-2016 转换10个作者 2016年后 不再转换。

中文作者因有英文摘要，不转换





如果仍然找不到匹配词，就会把该词组断开后再重复上述自动词汇转换过程，找到与键入的词语相匹配词语为止。若仍然没有匹配词，单个词会被联一起（用AND）在全部字段中检索。

例如：输入liver cancer

- a) 首先，将“liver cancer”作为一个短语在以上几个表里查找：
- b) 然后，将“liver cancer”分成“liver”和“cancer”两个词，再次在上述表中查找；
- c) 最后，将“liver”和“cancer”及其匹配的主题词，在所有字段查找。



转换结果

- liver cancer

"liver neoplasms"[MeSH Terms] OR ("liver"[All Fields] AND "neoplasms"[All Fields]) OR "liver neoplasms"[All Fields] OR ("liver"[All Fields] AND "cancer"[All Fields]) OR "liver cancer"[All Fields]

- Vitamin c

"ascorbic acid"[MeSH Terms] OR ("ascorbic"[All Fields] AND "acid"[All Fields]) OR "ascorbic acid"[All Fields] OR "vitamin c"[All Fields]

- *单个的数字和字母不进行拆分*

- 可在高级检索历史的的“details”部分查看，并调整检索策略。



2.7 检索规则-短语检索

如果在短语上加**半角双引号**后，系统将直接在所有字段中进行查找，不再进行自动转换。

"single cell"

"oxygen free radicals"

短横“-”和双引号功能类似。single-cell 和"single cell" 结果一样。



2.8 截词检索

无限截词符：*

- 在词的末尾加*号，PubMed就会检索出以该词为词根的所有词
 - infect*包括infections, infectious, infective, infectivity, infector等。
- 在单词中间或短语中某个指定词也可以加*号
 - colo*r / organi*ation* / "tumo*r associated macrophage*"
- 截词检索将关闭自动词语匹配功能，也不能进行扩展检索。
 - 如：heart attack*（心脏病发作）不会匹配MeSH词，也不会扩展检索myocardial infarction（心肌梗死）、myocardial stunning（心肌顿抑，缺血后心肌功能障碍）、shock、cardiogenic等这些方面的文献。



2.9 邻近算符

格式为：“检索词”[字段:~N]， N是检索词之间间隔的最大单词数量

检索词可以在指定距离内以任意顺序出现；

目前仅可以在Title、 Title/Abstract、 Affiliation字段使用邻近检索；

例如，“hip pain”[Title/Abstract:~2]， 可以检出： hip pain、 hip-related pain、 pain after total hip arthroplasty、 pain in hip osteoarthritis， 等。

[Which factors differentiate athletes with **hip/groin pain** from those without? A systematic review with meta-analysis.](#)

6

Cite Mosler AB, Agricola R, Weir A, Hölmich P, Crossley KM.

Br J Sports Med. 2015 Jun;49(12):810. doi: 10.1136/bjsports-2015-094602.

Share

PMID: 26031646 [Free PMC article.](#) [Review.](#)

[Consensus recommendations on the classification, definition and diagnostic criteria of **hip-related pain** in young and middle-aged active adults from the International **Hip-related Pain** Research Network, Zurich 2018.](#)

9

Cite

Reiman MP, Agricola R, Kemp JL, Heerey JJ, Weir A, van Klij P, Kassarian A, Mosler AB, Ageberg E, Hölmich P.



2.10 检索规则-布尔逻辑运算

- 逻辑词符（AND、OR、NOT）

cell AND apoptosis; vitamin c OR ascorbic acid; Lead poisoning NOT children

- 运算优先级为: PubMed按从左到右的顺序处理搜索, 使用括号来“嵌套”应该作为一个单元处理的概念, 然后将其合并到整体搜索中。

(asthma OR hay fever) AND immunotherapy

布尔逻辑检索允许在检索词后面附加字段标识

dna[mh] AND crick[au] AND 1993[dp]

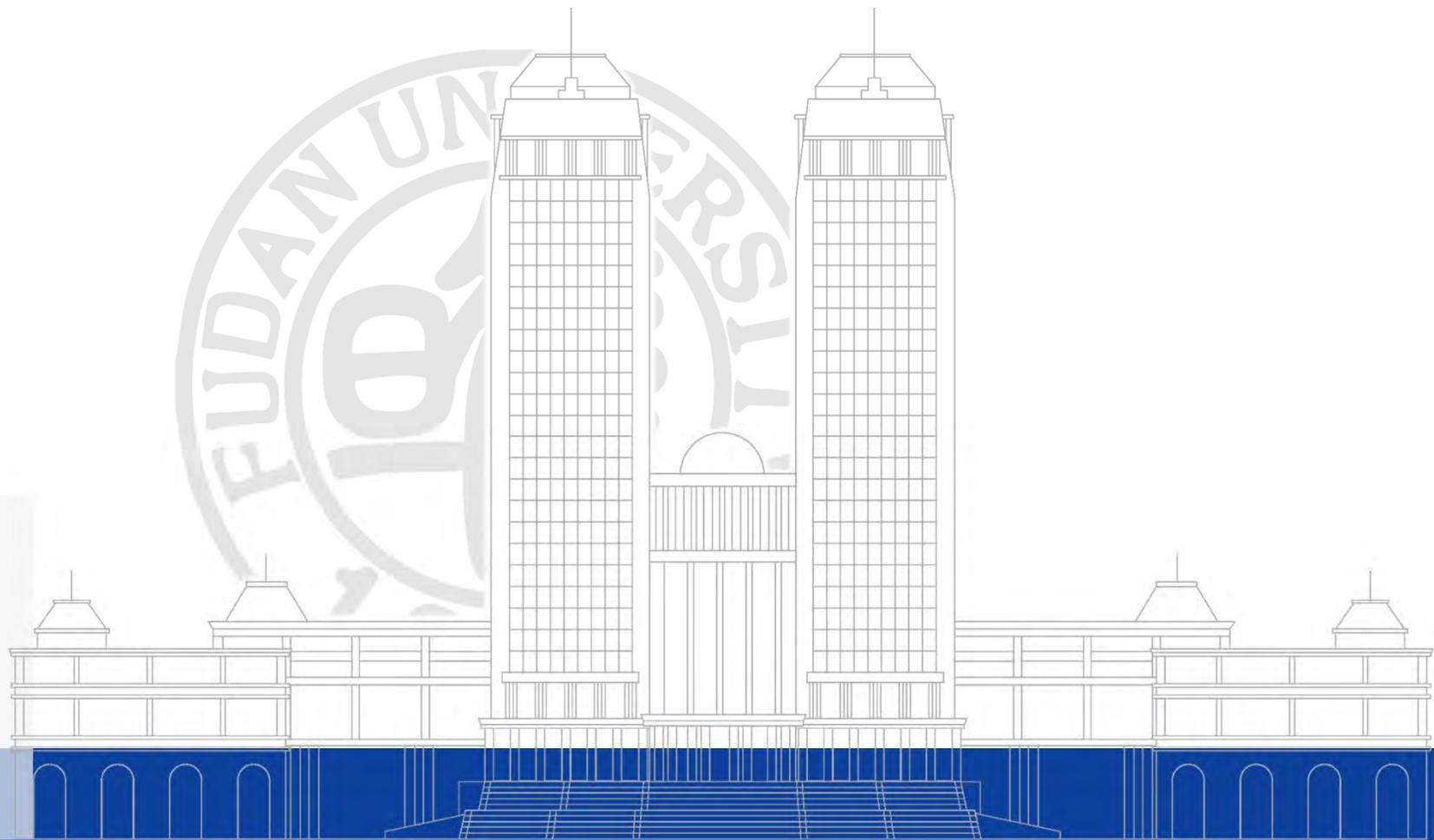
- 查带文摘的文献（1975年以后出版的文章）

检索词 AND hasabstract

例如: Neoplasms AND hasabstract



03



检索与利用



- 基本检索 - Basic Search
- 高级检索 - Advanced Search
- 主题词检索 - MeSH Databases
- 结果输出与外链 - Send to & Linkout



3.1 基本检索

- 检索步骤：
 - a) 进入pubmed主界面，
 - b) 在检索框输入任何有实质性意义的检索词
 - c) 点[search]按钮或按回车键，系统字段匹配进行
- 检索词的输入形式：

输入单词或短语或表达式，也可用*及双引号

著者姓名简写或全称： weng xz OR weng xz [au]， 2002年以后的文章有全称

含有禁用词时必须带字段名：by[AU]

刊名标题： 刊名全称、缩写、ISSN等： Journal of leukocyte biology, J leukoc biol, 0741-5400





- 当刊名与主题词相同时，刊名后需要附加字段标识符。

如：gene therapy[ta]

- 单个词刊名的期刊刊名后需要附加字段标识符。

如：Scanning[ta]、science[ta]、cell[ta]

- 带括号刊名的期刊，录入时应将括号省略。

J Hand Surg[Am]输入格式为J Hand Surg Am





PubMed.gov

J leukoc biol

Advanced

PubMed® comprises more than 30 million citations for biomedical literature from MEDLINE, life science journals, and biological databases. Citations may include links to full-text content from PubMed Central and publisher web sites.





J leukoc biol

Search

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User Guide

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Email

Send to

Sorted by: Publication date ↓

Display options

MY NCBI FILTERS

8,213 results

RESULTS BY YEAR



Cytokine storm and leukocyte changes in mild versus severe SARS-CoV-2 infection: Review of 3939 COVID-19 patients in China and emerging pathogenesis and therapy concepts.

1

Wang J, Jiang M, Chen X, Montaner LJ.

J Leukoc Biol. 2020 Jun 13. doi: 10.1002/JLB.3COVR0520-272R. Online ahead of print.

PMID: 32534467 Review.

Cite Share

TEXT AVAILABILITY

- Abstract
- Free full text
- Full text

Targeting NLRP3 and staphylococcal pore-forming toxin receptors in human-induced pluripotent stem cell-derived macrophages.

2

Chow SH, Deo P, Yeung ATY, Kostoulas XP, Jeon Y, Gao ML, Seidi A, Olivier FAB, Sridhar S, Nethercott C, Cameron D, Robertson AAB, Robert R, Mackay CR, Traven A, Jin ZB, Hale C, Dougan G, Peleg AY, Naderer T.

J Leukoc Biol. 2020 Jun 12. doi: 10.1002/JLB.4MA0420-497R. Online ahead of print.

ARTICLE ATTRIBUTE



基本检索实例

【例题】检索“尼群地平治疗高血压”方面的文献

- 分析: 自由词检索
- 检索词: nitrendipine
hypertension/high blood pressure
nitrendipine AND (hypertension OR high blood pressure)
- 检索方法:
 1. 输入综合检索式
 2. 单个检索词分别检索, 然后在检索史中进行组配





nitrendipine AND (hypertension OR high blood pressure)

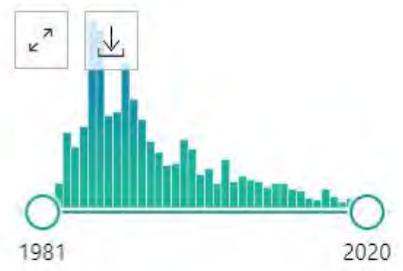
Advanced Create alert Create RSS User Guide

Save Email Send to Sorted by: Publication date Display options

MY NCBI FILTERS

953 results

RESULTS BY YEAR



PAIT-Survey Follow-Up: Changes in Albuminuria in Hypertensive Diabetic Patients with Mild-Moderate Chronic Kidney Disease.
 1 Fici F, Ari Bakir E, Ilkay Yüce E, Kanuncu S, Makel W, Tarim BA, Robles NR.
 High Blood Press Cardiovasc Prev. 2020 Feb;27(1):43-49. doi: 10.1007/s40292-020-00358-1. Epub 2020 Jan 9.
 PMID: 31916208 Clinical Trial.
Blood pressure was measured with a validated digital device. RESULTS: At baseline, albuminuria was present in 310 subjects (46.4%) (microalbuminuria in 263 (84.8%), macroalbuminuria in 15.2%), and normoalbuminuria in 53.6% 358. ...**Blood pressure** was si ...

Cite Share

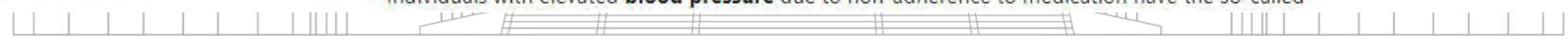
TEXT AVAILABILITY

- Abstract
- Free full text
- Full text

Münchhausen Syndrome as an Unusual Cause of Pseudo-resistant Hypertension: A Case Report.
 2 Kobusiak-Prokopowicz M, Marciniak A, Tokarczyk B, Kała M, Leszek J, Mysiak A.
 Open Med (Wars). 2019 Nov 7;14:792-796. doi: 10.1515/med-2019-0094. eCollection 2019.
 PMID: 31737783 Free PMC article.
 Individuals with elevated **blood pressure** due to non-adherence to medication have the so-called

ARTICLE ATTRIBUTE

- Associated data



3.2 高级检索：一般限制题目或摘要

The screenshot displays the PubMed.gov search interface. A dropdown menu is open on the left, listing various search filters. The 'Title/Abstract' filter is selected and highlighted in blue. Below the dropdown, a search box contains the text 'nitrendipine'. To the right of the search box are buttons for 'ADD', 'Show Index', and 'Search'. The background shows the PubMed.gov logo and a 'Log in' button.

MeSH Terms
Other Term
Pagination
Pharmacological Action
Publication Type
Publisher
Secondary Source ID
Subject - Personal Name
Supplementary Concept
Text Word
Title
Title/Abstract

Title/Abstract nitrendipine

ADD Show Index

Search

Query box
Enter / edit your search query here





User Guide

Add terms to the query box

Title/Abstract hypertension OR high blood pressure

AND

Show Index

Query box

nitrendipine[Title/Abstract]

Search



Query box

(nitrendipine[Title/Abstract]) AND (hypertension[Title/Abstract] OR high blood pressure[Title/Abstract])

Search





(nitrendipine[Title/Abstract]) AND (hypertension[Title/Abstract] OR high bl



Search

[Advanced](#) [Create alert](#) [Create RSS](#)

[User Guide](#)

Save

Email

Send to

Sorted by: Best match

Display options

547 results

Page 1 of 28

Nitrendipine and Dementia: Forgotten Positive Facts?

1 Novotny M, Klimova B, Valis M.

Cite Front Aging Neurosci. 2018 Dec 18;10:418. doi: 10.3389/fnagi.2018.00418. eCollection 2018.

PMID: 30618724 **Free PMC article.** Review.

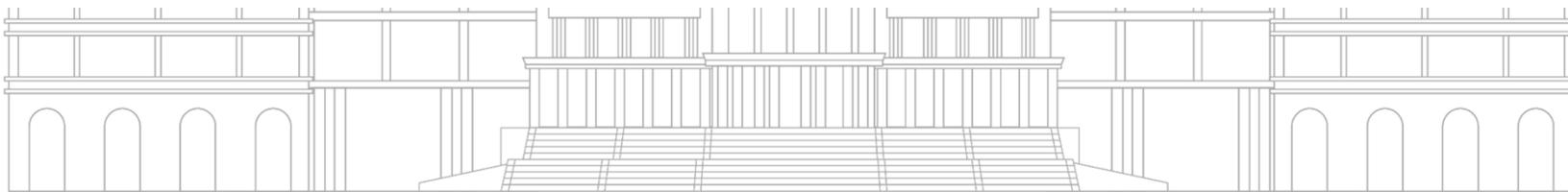
Share Therefore, researchers attempt to reduce risk factors causing the development of dementia such as **high blood pressure**. Epidemiological studies have shown that **hypertension** increases the risk of dementia at an older age. ...The most significant preventi ...

Azelnidipine.



3.3 主题词检索

- 检索步骤一般为：
 - a) 先分析要检索的课题，找出关键词，用其作为自由词检索，挑选几篇相关的文章进行阅读，查看文章的详细标引，确定MESH词。
 - b) 进入mesh词数据库搜索，选择跟研究内容相关的副主题词。
 - c) 用主题词和副主题词匹配的方法在pubmed里搜索相关文章。



主题词检索选择

MeSH入口

输入检索词，点“search”后会自动转换为相应的MeSH词供选择。

NIH National Library of Medicine
National Center for Biotechnology Information

MeSH MeSH cancer
Create alert Limits Advanced

Summary ▾ 20 per page ▾

Send

Search results

Items: 1 to 20 of 397

<< First < Prev Page 1 of 20 Next > |

[Neoplasms](#)

1. New abnormal growth of tissue. Malignant **neoplasms** show a greater degree of anaplasia and have the properties of invasion and metastasis, compared to benign **neoplasms**.

Year introduced: /diagnosis was NEOPLASM DIAGNOSIS 1964-1965

[Hereditary Breast and Ovarian Cancer Syndrome](#)

2. Autosomal dominant HEREDITARY **CANCER** SYNDROME in which a mutation most often in either BRCA1 or BRCA2 is associated with a significantly increased risk for breast and ovarian cancers.

Year introduced: 2012



副主题词选择

组配副主题词

Neoplasms

New abnormal growth of tissue. Malignant **neoplasms** show a greater degree of anaplasia and have the properties of invasion and metastasis, compared to benign **neoplasms**.

Year introduced: /diagnosis was NEOPLASM DIAGNOSIS 1964-1965

PubMed search builder options

Supplementing:

- | | | |
|-----------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------|
| <input type="checkbox"/> analysis | <input type="checkbox"/> epidemiology | <input type="checkbox"/> psychology |
| <input type="checkbox"/> anatomy and histology | <input type="checkbox"/> ethnology | <input type="checkbox"/> radiation effects |
| <input type="checkbox"/> antagonists and inhibitors | <input type="checkbox"/> etiology | <input type="checkbox"/> radiography |
| <input type="checkbox"/> blood | <input type="checkbox"/> genetics | <input type="checkbox"/> radionuclide imaging |
| <input type="checkbox"/> blood supply | <input type="checkbox"/> growth and development | <input type="checkbox"/> radiotherapy |
| <input type="checkbox"/> cerebrospinal fluid | <input type="checkbox"/> history | <input type="checkbox"/> rehabilitation |
| <input type="checkbox"/> chemically induced | <input type="checkbox"/> immunology | <input type="checkbox"/> secretion |
| <input type="checkbox"/> chemistry | <input type="checkbox"/> injuries | <input type="checkbox"/> statistics and numerical data |
| <input type="checkbox"/> classification | <input type="checkbox"/> isolation and purification | <input type="checkbox"/> supply and distribution |
| <input type="checkbox"/> complications | <input type="checkbox"/> legislation and jurisprudence | <input type="checkbox"/> surgery |
| <input type="checkbox"/> congenital | <input type="checkbox"/> metabolism | <input type="checkbox"/> therapeutic use |
| <input type="checkbox"/> cytology | <input type="checkbox"/> microbiology | <input type="checkbox"/> therapy |
| <input type="checkbox"/> diagnosis | <input type="checkbox"/> mortality | <input type="checkbox"/> transmission |
| <input type="checkbox"/> diet therapy | <input type="checkbox"/> nursing | <input type="checkbox"/> transplantation |
| <input type="checkbox"/> drug therapy | <input type="checkbox"/> parasitology | <input type="checkbox"/> ultrasonography |
| <input type="checkbox"/> economics | <input type="checkbox"/> pathology | <input type="checkbox"/> ultrastructure |
| <input type="checkbox"/> education | <input type="checkbox"/> physiology | <input type="checkbox"/> urine |
| <input type="checkbox"/> embryology | <input type="checkbox"/> physiopathology | <input type="checkbox"/> veterinary |
| <input type="checkbox"/> enzymology | <input type="checkbox"/> prevention and control | <input type="checkbox"/> virology |

可组配一项或多项

Restrict to MeSH Major Topic.

Do not include MeSH terms found below this term in the MeSH hierarchy.

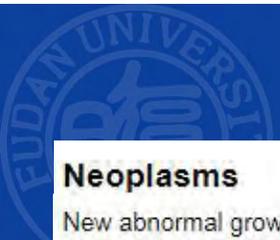
Entry Terms:

- Neoplasm
- Tumors
- Tumor
- **Cancer**
- Cancers
- Benign Neoplasms
- **Neoplasms, Benign**
- Benign Neoplasm
- Neoplasm, Benign

仅作为主要主题词

不对下位主题词进行扩展检索





Neoplasms

New abnormal growth of tissue. Malignant neoplasms show a greater degree of anaplasia and have the properties of invasion and metastasis, compared to benign neoplasms.

Year introduced: /diagnosis was NEOPLASM DIAGNOSIS 1964-1965

PubMed search builder options

Subheadings:

- | | | |
|-----------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------|
| <input type="checkbox"/> abnormalities | <input type="checkbox"/> education | <input type="checkbox"/> pathology |
| <input type="checkbox"/> administration and dosage | <input type="checkbox"/> embryology | <input type="checkbox"/> pharmacology |
| <input type="checkbox"/> analysis | <input type="checkbox"/> enzymology | <input type="checkbox"/> physiology |
| <input type="checkbox"/> anatomy and histology | <input type="checkbox"/> epidemiology | <input type="checkbox"/> physiopathology |
| <input type="checkbox"/> antagonists and inhibitors | <input type="checkbox"/> ethnology | <input type="checkbox"/> prevention and control |
| <input type="checkbox"/> biosynthesis | <input type="checkbox"/> etiology | <input type="checkbox"/> psychology |
| <input type="checkbox"/> blood | <input type="checkbox"/> genetics | <input type="checkbox"/> radiation effects |
| <input type="checkbox"/> blood supply | <input type="checkbox"/> growth and development | <input type="checkbox"/> radiotherapy |
| <input type="checkbox"/> cerebrospinal fluid | <input type="checkbox"/> history | <input type="checkbox"/> rehabilitation |
| <input type="checkbox"/> chemical synthesis | <input type="checkbox"/> immunology | <input type="checkbox"/> secondary |
| <input type="checkbox"/> chemically induced | <input type="checkbox"/> injuries | <input type="checkbox"/> statistics and numerical data |
| <input type="checkbox"/> chemistry | <input type="checkbox"/> innervation | <input type="checkbox"/> supply and distribution |
| <input type="checkbox"/> classification | <input type="checkbox"/> isolation and purification | <input checked="" type="checkbox"/> surgery |
| <input type="checkbox"/> complications | <input type="checkbox"/> legislation and jurisprudence | <input type="checkbox"/> therapeutic use |
| <input type="checkbox"/> congenital | <input type="checkbox"/> metabolism | <input type="checkbox"/> therapy |
| <input type="checkbox"/> cytology | <input type="checkbox"/> microbiology | <input type="checkbox"/> transmission |
| <input type="checkbox"/> diagnosis | <input type="checkbox"/> mortality | <input type="checkbox"/> transplantation |
| <input type="checkbox"/> diagnostic imaging | <input type="checkbox"/> nursing | <input type="checkbox"/> ultrastructure |

"Neoplasms/surgery" [Majr:NoExp]

Add to search builder AND ▾

Search PubMed



Related information

PubMed

PubMed - Major Topic

Clinical Queries

NLM MeSH Browser

dbGaP Links

MedGen

Recent Activity

Turr

Neoplasms

Q cancer (393)



"Neoplasms/surgery"[Majr:NoExp]



Search

Advanced Create alert Create RSS

User Guide

Save

Email

Send to

Sorted by: Best match

Display options

MY NCBI FILTERS

3,984 results

RESULTS BY YEAR



TEXT AVAILABILITY

- Abstract
- Free full text

Surgery for Cancer: A Trigger for Metastases.

1 Tohme S, Simmons RL, Tsung A.

Cancer Res. 2017 Apr 1;77(7):1548-1552. doi: 10.1158/0008-5472.CAN-16-1536. Epub 2017 Mar 22.

PMID: 28330928 **Free PMC article.** Review.

“ Cite Share

The evolution of cancer surgery and future perspectives.

2 Wyld L, Audisio RA, Poston GJ.

Nat Rev Clin Oncol. 2015 Feb;12(2):115-24. doi: 10.1038/nrclinonc.2014.191. Epub 2014 Nov 11.

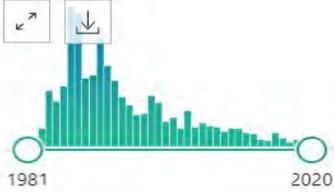
PMID: 25384943 Review.

“ Cite Share



3.4 文献筛选

RESULTS BY YEAR



1981 2020

TEXT AVAILABILITY

- Abstract
- Free full text
- Full text

ARTICLE ATTRIBUTE

- Associated data

ARTICLE TYPE

- Books and Documents
- Clinical Trial
- Meta-Analysis
- Randomized Controlled Trial
- Review
- Systematic Reviews

PUBLICATION DATE

- 1 year
- 5 years

ARTICLE TYPE

SPECIES

LANGUAGE

SEX

SUBJECT

JOURNAL

AGE

- Address
- Autobiography
- Bibliography
- Biography
- Case Reports
- Classical Article
- Clinical Conference
- Clinical Study
- Clinical Trial Protocol
- Clinical Trial, Phase I
- Clinical Trial, Phase II
- Clinical Trial, Phase III
- Clinical Trial, Phase IV
- Introductory Journal Article
- Journal Article
- Lecture
- Legal Case
- Legislation
- Letter
- Multicenter Study
- News
- Newspaper Article
- Observational Study
- Observational Study, Veterinary
- Overall
- Patient Education Handout

主题词检索例1

【例题】检索肝癌药物治疗（包括中药和西药）的相关文献

- 分析：

自由词1： liver cancer OR liver tumor OR liver carcinoma OR liver neoplasm OR hepatic carcinoma OR hepatic cancer OR hepatic tumor OR hepatic neoplasm OR hepatocellular cancer OR hepatoma OR hepatocarcinoma OR hepatocellular neoplasm OR hepatocellular tumor OR hepatocellular carcinoma OR hepatic cell carcinoma OR HCC

自由词2: drug therapy

自由词检索式：

(liver cancer OR liver tumor OR liver carcinoma OR liver neoplasm OR hepatic carcinoma OR hepatic cancer OR hepatic tumor OR hepatic neoplasm OR hepatocellular cancer OR hepatoma OR hepatocarcinoma OR hepatocellular neoplasm OR hepatocellular tumor OR hepatocellular carcinoma OR hepatic cell carcinoma OR HCC) AND drug therapy





例子

(liver cancer OR liver tumor OR liver carcinoma OR liver neoplasm OR hepatic cancer) [X] **Search**

[Advanced](#) [Create alert](#) [Create RSS](#) [User Guide](#)

Sort by:

85,221 results

<< < Page of 8,523 > >>

Hepatocellular carcinoma (HCC): Epidemiology, etiology and molecular classification.

1

Cite Chidambaranathan-Reghupaty S, Fisher PB, Sarkar D.

Adv Cancer Res. 2021;149:1-61. doi: 10.1016/bs.acr.2020.10.001. Epub 2020 Nov 28.

Share

PMID: 33579421 [Free PMC article.](#) [Review.](#)

Hepatocellular carcinoma (HCC), the primary malignancy of hepatocytes, is a diagnosis with bleak





MeSH

MeSH

liver cancer



Search

[Create alert](#) [Limits](#) [Advanced](#)

See 435 citations in Liver Cancer by :

[Relationship of Atezolizumab plus Bevacizumab Treatment with Muscle Volume Loss in Unresectable Hepatocellular Carcinoma Patients: Multicenter Analysis.](#) Hiraoka A et al. *Liver Cancer*. (2023)

[Tumor Radiomic Features on Pretreatment MRI to Predict Response to Lenvatinib plus an Anti-PD-1 Antibody in Advanced Hepatocellular Carcinoma: A Multicenter Study.](#) Xu B et al. *Liver Cancer*. (2023)

[Risk Factors for Early Onset of Proteinuria in Patients Receiving Atezolizumab Plus Bevacizumab for Unresectable Hepatocellular Carcinoma.](#) Ando Y et al. *Liver Cancer*. (2023)

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Database:

Concepts

Search details

"liver neoplasms"[
cancer[Text Word]

Search results

Items: 10

Liver Neoplasms

1. Tumors or cancer of the LIVER.

DLC-1 (deleted in liver cancer) protein, mouse [Supplementary Concept]

2. GenBank AF178078



Liver Neoplasms

Tumors or cancer of the LIVER.

PubMed search builder options

Subheadings:

- | | | |
|--------------------------------------------------|---------------------------------------|-------------------------------------------------|
| <input type="checkbox"/> blood | <input type="checkbox"/> embryology | <input type="checkbox"/> pathology |
| <input type="checkbox"/> blood supply | <input type="checkbox"/> enzymology | <input type="checkbox"/> physiopathology |
| <input type="checkbox"/> cerebrospinal fluid | <input type="checkbox"/> epidemiology | <input type="checkbox"/> prevention and control |
| <input type="checkbox"/> chemically induced | <input type="checkbox"/> ethnology | <input type="checkbox"/> psychology |
| <input type="checkbox"/> chemistry | <input type="checkbox"/> etiology | <input type="checkbox"/> radiotherapy |
| <input type="checkbox"/> classification | <input type="checkbox"/> genetics | <input type="checkbox"/> rehabilitation |
| <input type="checkbox"/> complications | <input type="checkbox"/> history | <input type="checkbox"/> secondary |
| <input type="checkbox"/> congenital | <input type="checkbox"/> immunology | <input type="checkbox"/> surgery |
| <input type="checkbox"/> diagnosis | <input type="checkbox"/> metabolism | <input type="checkbox"/> therapy |
| <input type="checkbox"/> diagnostic imaging | <input type="checkbox"/> microbiology | <input type="checkbox"/> ultrastructure |
| <input type="checkbox"/> diet therapy | <input type="checkbox"/> mortality | <input type="checkbox"/> urine |
| <input checked="" type="checkbox"/> drug therapy | <input type="checkbox"/> nursing | <input type="checkbox"/> veterinary |
| <input type="checkbox"/> economics | <input type="checkbox"/> parasitology | <input type="checkbox"/> virology |

Restrict to MeSH Major Topic.

Do not include MeSH terms found below this term in the MeSH hierarchy.

Tree Number(s): C04.588.274.623, C06.301.623, C06.552.697

MeSH Unique ID: D008113

Entry Terms:

- Neoplasms, Hepatic

PubMed Search Builder

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 [Liver Neoplasms](#) MeSH

 [liver cancer \(10\)](#) MeSH



"Liver Neoplasms/drug therapy"[Mesh]



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25,293 results



Page

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of 2,530



1 Anticancer potential of *Bacillus coagulans* MZY531 on mouse H22 hepatocellular carcinoma cells via anti-proliferation and apoptosis induction.

Cite

Zhao Z, Yang Q, Zhou T, Liu C, Sun M, Cui X, Zhang X.

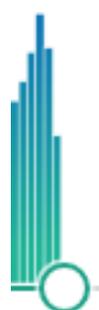
BMC Complement Med Ther. 2023 Sep 13;23(1):318. doi: 10.1186/s12906-023-04120-7.

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2 Cell microparticles loaded with tumor antigen and resiquimod reprogram tumor-associated macrophages and promote stem-like CD8⁺ T cells to boost anti-PD-1



2024

主题词检索例2

【例题】检索非甾体抗炎药加重呼吸道疾病的文献

- NSAID-Exacerbated Respiratory Disease
- 多个主题词的选择?



MeSH

MeSH

exacerbated respiratory disease

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Send

Asthma, Aspirin-Induced

Asthmatic adverse reaction (e.g., BRONCHOCONSTRICTION) to conventional NSAIDS including aspirin use.

Year introduced: 2010

[PubMed search builder options](#)[Subheadings:](#)

- | | | |
|----------------------------------------------|---------------------------------------|-------------------------------------------------|
| <input type="checkbox"/> blood | <input type="checkbox"/> epidemiology | <input type="checkbox"/> pathology |
| <input type="checkbox"/> cerebrospinal fluid | <input type="checkbox"/> ethnology | <input type="checkbox"/> physiopathology |
| <input type="checkbox"/> classification | <input type="checkbox"/> etiology | <input type="checkbox"/> prevention and control |
| <input type="checkbox"/> complications | <input type="checkbox"/> genetics | <input type="checkbox"/> psychology |
| <input type="checkbox"/> congenital | <input type="checkbox"/> history | <input type="checkbox"/> radiotherapy |
| <input type="checkbox"/> diagnosis | <input type="checkbox"/> immunology | <input type="checkbox"/> rehabilitation |
| <input type="checkbox"/> diagnostic imaging | <input type="checkbox"/> metabolism | <input type="checkbox"/> surgery |
| <input type="checkbox"/> diet therapy | <input type="checkbox"/> microbiology | <input type="checkbox"/> therapy |
| <input type="checkbox"/> drug therapy | <input type="checkbox"/> mortality | <input type="checkbox"/> urine |
| <input type="checkbox"/> economics | <input type="checkbox"/> nursing | <input type="checkbox"/> veterinary |
| <input type="checkbox"/> embryology | <input type="checkbox"/> parasitology | <input type="checkbox"/> virology |
| <input type="checkbox"/> enzymology | | |

 Restrict to MeSH Major Topic. Do not include MeSH terms found below this term in the MeSH hierarchy.

Tree Number(s): C08.127.108.054, C08.674.095.054, C20.543.480.149, C25.100.468.189

MeSH Unique ID: D055963

[Entry Terms:](#)**Entry Terms:**

- Aspirin-Induced Asthmas
- Asthma, Aspirin Induced
- Asthmas, Aspirin-Induced
- Aspirin-Induced Asthma
- Aspirin Induced Asthma
- Aspirin Induced Asthmas
- Asthmas, Aspirin Induced
- Induced Asthma, Aspirin
- Induced Asthmas, Aspirin
- Aspirin-Induced Asthma Syndrome
- Aspirin Induced Asthma Syndrome
- Aspirin-Induced Asthma Syndromes
- Asthma Syndrome, Aspirin-Induced
- Asthma Syndromes, Aspirin-Induced
- Syndrome, Aspirin-Induced Asthma
- Syndromes, Aspirin-Induced Asthma
- Asthma, NSAID-induced
- Asthma, NSAID induced
- Asthmas, NSAID-induced
- NSAID-induced Asthma
- NSAID-induced Asthmas
- NSAID-Exacerbated Respiratory Disease
- Disease, NSAID-Exacerbated Respiratory
- Diseases, NSAID-Exacerbated Respiratory
- NSAID Exacerbated Respiratory Disease
- NSAID-Exacerbated Respiratory Diseases
- Respiratory Disease, NSAID-Exacerbated
- Respiratory Diseases, NSAID-Exacerbated
- NERD NSAID-Exacerbated Respiratory Disease
- NERD NSAID Exacerbated Respiratory Disease

Previous Indexing:

- [Asthma/chemically induced \(1973-2009\)](#)



Asthma, Aspirin-Induced

Asthmatic adverse reaction (e.g., BRONCHOCONSTRICTION) to conventional NSAIDS including aspirin use.

Year introduced: 2010

Previous Indexing:

- Asthma/chemically induced (1973-2009)

All MeSH Categories

Diseases Category

Respiratory Tract Diseases

Bronchial Diseases

Asthma

Asthma, Aspirin-Induced

这表示2010年以后的文章有了专指的主题词进行标引。如果你只需要2010年以后的文章，理论上这个主题词就够了





"Asthma, Aspirin-Induced"[Mesh]



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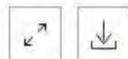
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537 results

Page 1 of 6

RESULTS BY YEAR



PUBLICATION DATE

- 1 year
- 5 years
- 10 years
- Custom Range

1 Oral and intranasal aspirin desensitisation for non-steroidal anti-inflammatory drug (NSAID)-exacerbated respiratory disease.

Cite Lourijsen E, Avdeeva K, Gan KL, Fokkens W.

Share Cochrane Database Syst Rev. 2025 Jan 7;1:CD013476. doi: 10.1002/14651858.CD013476.pub2. PMID: 39775459

2 Update on aspirin exacerbated respiratory disease with chronic rhinosinusitis. Gandre JR, Ledford DK.

Cite Curr Opin Allergy Clin Immunol. 2025 Feb 1;25(1):10-18. doi: 10.1097/ACI.0000000000001054. Epub 2024 Dec 6.

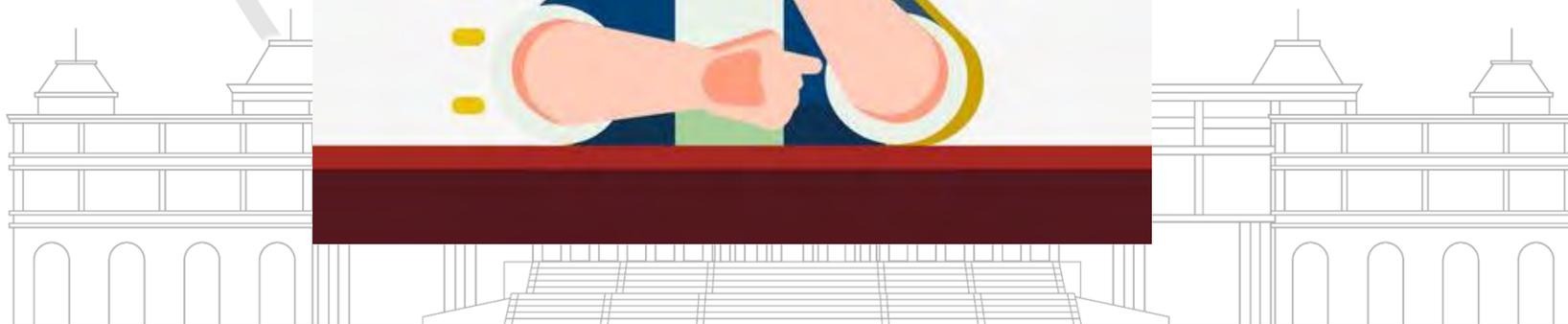
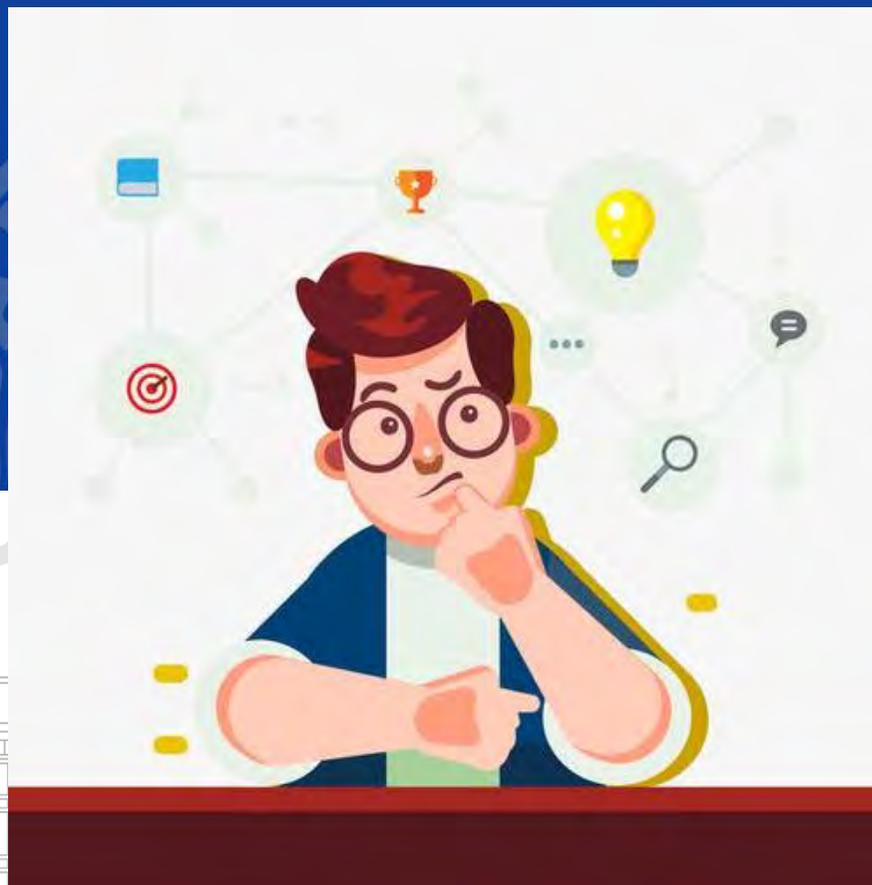
Share PMID: 39641754 Review.

3 New insights into the mechanisms of aspirin-exacerbated respiratory disease. Laidlaw TM.

Cite Curr Opin Allergy Clin Immunol. 2025 Feb 1;25(1):41-46. doi: 10.1097/ACI.0000000000001051. Epub 2024



如果还想要专指主题词标引之前的文章呢？



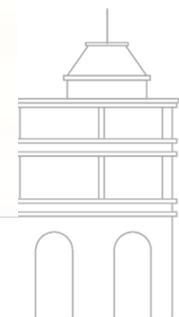
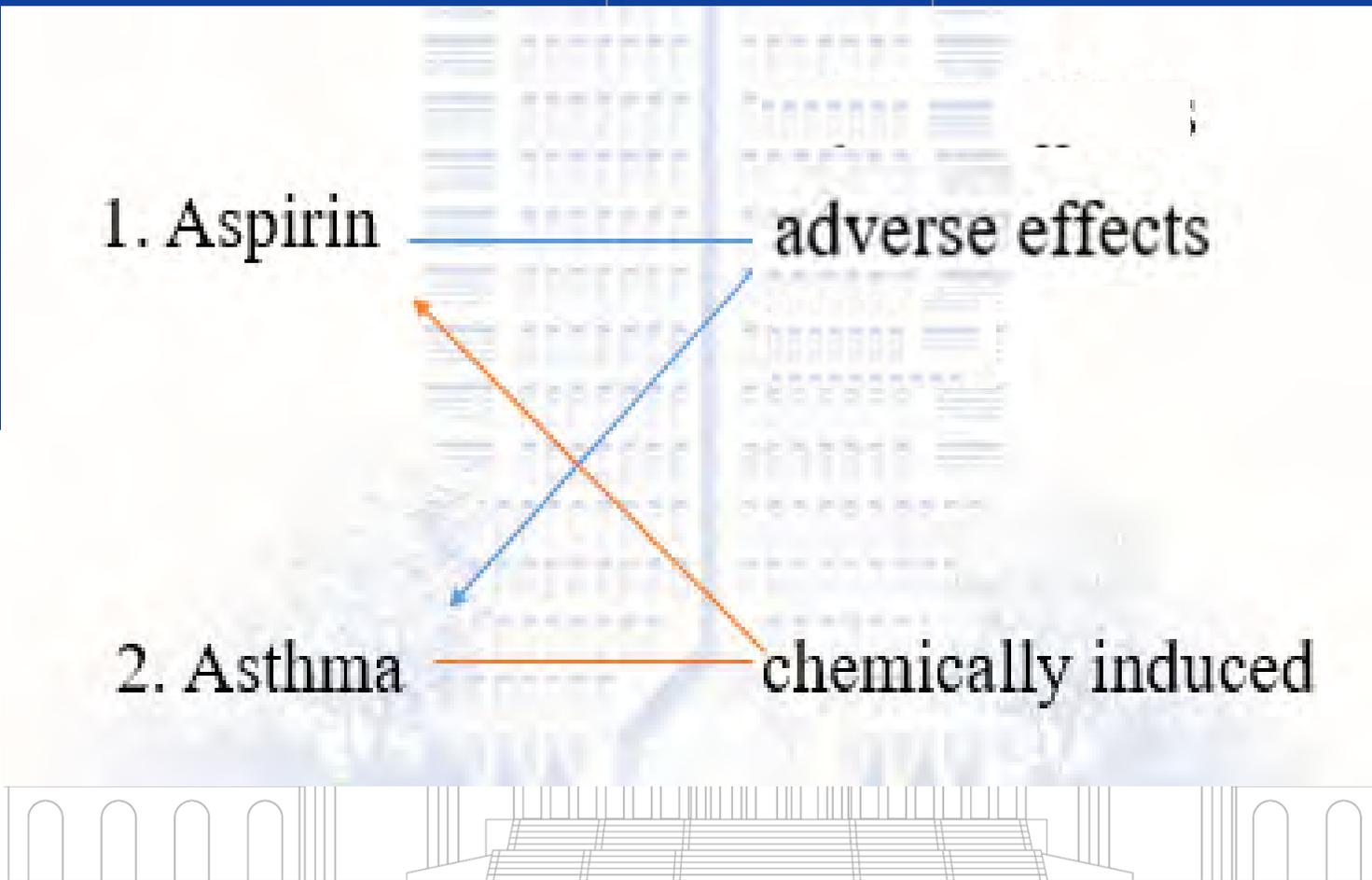


1. Aspirin

adverse effects

2. Asthma

chemically induced





MeSH

MeSH

aspirin

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Summary 20 per page

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Items: 1 to 20 of 40

<< First < Prev Page 1 of 2 Next > Last >>

[Aspirin](#)

1. The prototypical analgesic used in the treatment of mild to moderate pain. It has anti-inflammatory and antipyretic properties and acts as an inhibitor of cyclooxygenase which results in the inhibition of the biosynthesis of prostaglandins. **Aspirin** also inhibits platelet aggregation and is used in the prevention of arterial and venous thrombosis. (From Martindale, The Extra Pharmacopoeia, 30th ed, p5)
Year introduced: 1965
2. [Asthma, Aspirin-Induced](#)
Asthmatic adverse reaction (e.g., BRONCHOCONSTRICTION) to conventional NSAIDS including **aspirin** use.
Year introduced: 2010
3. [Aspirin, Dipyridamole Drug Combination](#)
A drug combination of **aspirin** and dipyridamole that functions as a PLATELET AGGREGATION INHIBITOR, used to prevent THROMBOSIS and STROKE in TRANSIENT ISCHEMIC ATTACK patients.
Year introduced: 2016 (1986)





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Aspirin

The prototypical analgesic used in the treatment of mild to moderate pain. It has anti-inflammatory and antipyretic properties and acts as an inhibitor of cyclooxygenase which results in the inhibition of the biosynthesis of prostaglandins. Aspirin also inhibits platelet aggregation and is used in the prevention of arterial and venous thrombosis. (From Martindale, The Extra Pharmacopoeia, 30th ed, p5)

Year introduced: 1965

PubMed search builder options

[Subheadings:](#)

- | | | |
|------------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------|
| <input type="checkbox"/> administration and dosage | <input type="checkbox"/> classification | <input type="checkbox"/> physiology |
| <input checked="" type="checkbox"/> adverse effects | <input type="checkbox"/> economics | <input type="checkbox"/> poisoning |
| <input type="checkbox"/> agonists | <input type="checkbox"/> etiology | <input type="checkbox"/> radiation effects |
| <input type="checkbox"/> analogs and derivatives | <input type="checkbox"/> history | <input type="checkbox"/> standards |
| <input type="checkbox"/> analysis | <input type="checkbox"/> immunology | <input type="checkbox"/> statistics and numerical data |
| <input type="checkbox"/> antagonists and inhibitors | <input type="checkbox"/> isolation and purification | <input type="checkbox"/> supply and distribution |
| <input type="checkbox"/> blood | <input type="checkbox"/> metabolism | <input type="checkbox"/> therapeutic use |
| <input type="checkbox"/> cerebrospinal fluid | <input type="checkbox"/> organization and administration | <input type="checkbox"/> therapy |
| <input type="checkbox"/> chemical synthesis | <input type="checkbox"/> pharmacokinetics | <input type="checkbox"/> toxicity |
| <input type="checkbox"/> chemistry | <input type="checkbox"/> pharmacology | <input type="checkbox"/> urine |

Restrict to MeSH Major Topic.

Do not include MeSH terms found below this term in the MeSH hierarchy.

adverse effects

- [poisoning](#)
- [toxicity](#)

PubMed Search Builder

"Aspirin/adverse effects" [Mesh]

Add to search builder AND ▾

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Related information

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Aspirin





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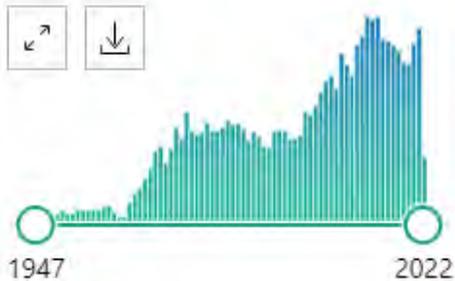
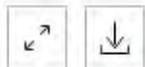
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RESULTS BY YEAR



TEXT AVAILABILITY

1 Aspirin/NSAID Challenge Should Be Performed Routinely in Patients With Self-Reported Aspirin/NSAID Allergy.

Cite White AA, Lang DM. J Allergy Clin Immunol Pract. 2022 May;10(5):1293-1294. doi: 10.1016/j.jaip.2022.01.049. PMID: 35526866 No abstract available.

2 [Idiopathic esophageal submucosal hematoma during antithrombotic therapy for essential thrombocythemia].

Cite Kishi Y, Aota Y, Horie Y, Sutoh A, Moriyama M, Okabe M, Iguchi T, Yokouchi Y, Gotoh A, Maetani I.





Full ▾

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Asthma

A form of bronchial disorder with three distinct components: airway hyper-responsiveness (RESPIRATORY HYPERSENSITIVITY), airway INFLAMMATION, and intermittent AIRWAY OBSTRUCTION. It is characterized by spasmodic contraction of airway smooth muscle, WHEEZING, and dyspnea (DYSPNEA, PAROXYSMAL).

PubMed search builder options

Subheadings:

- | | | |
|--------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------|
| <input type="checkbox"/> analysis | <input type="checkbox"/> embryology | <input type="checkbox"/> parasitology |
| <input type="checkbox"/> anatomy and histology | <input type="checkbox"/> enzymology | <input type="checkbox"/> pathology |
| <input type="checkbox"/> blood | <input type="checkbox"/> epidemiology | <input type="checkbox"/> physiology |
| <input type="checkbox"/> cerebrospinal fluid | <input type="checkbox"/> ethnology | <input type="checkbox"/> physiopathology |
| <input checked="" type="checkbox"/> chemically induced | <input type="checkbox"/> etiology | <input type="checkbox"/> prevention and control |
| <input type="checkbox"/> classification | <input type="checkbox"/> genetics | <input type="checkbox"/> psychology |
| <input type="checkbox"/> complications | <input type="checkbox"/> history | <input type="checkbox"/> radiotherapy |
| <input type="checkbox"/> congenital | <input type="checkbox"/> immunology | <input type="checkbox"/> rehabilitation |
| <input type="checkbox"/> diagnosis | <input type="checkbox"/> legislation and jurisprudence | <input type="checkbox"/> statistics and numerical data |
| <input type="checkbox"/> diagnostic imaging | <input type="checkbox"/> metabolism | <input type="checkbox"/> surgery |
| <input type="checkbox"/> diet therapy | <input type="checkbox"/> microbiology | <input type="checkbox"/> therapy |
| <input type="checkbox"/> drug effects | <input type="checkbox"/> mortality | <input type="checkbox"/> urine |
| <input type="checkbox"/> drug therapy | <input type="checkbox"/> nursing | <input type="checkbox"/> veterinary |
| <input type="checkbox"/> economics | <input type="checkbox"/> organization and administration | <input type="checkbox"/> virology |

Restrict to MeSH Major Topic.

PubMed Search Builder

"Asthma/chemically induced" [Mesh]

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Asthma

MeSH





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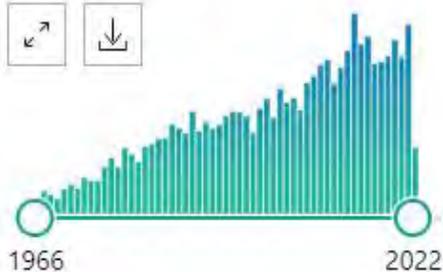
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5,111 results

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RESULTS BY YEAR



TEXT AVAILABILITY

Cleaning Products Commonly Used in Oklahoma Family Child Care Homes: Implications for Respiratory Risk and Children's Health.

1

Cite

Querdibitty CD, Wetherill MS, Sisson SB, Williams B, Aithinne K, Seo H, Inhofe NR, Campbell J, Slawinski M, Salvatore AL.

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Int J Environ Res Public Health. 2022 Apr 3;19(7):4299. doi: 10.3390/ijerph19074299.

PMID: 35409980 [Free PMC article.](#)

Comparative efficacy of inhalers in mild-to-moderate asthma: systematic review and network meta-analysis.

2





PubMed Advanced Search Builder



[User Guide](#)

Add terms to the query box

All Fields Enter a search term

AND

[Show Index](#)

Query box

("Asthma/chemically induced"[Mesh]) AND ("Aspirin/adverse effects"[Mesh])

Search

("Asthma/chemically induced"[Mesh]) AND ("Aspirin/adverse effects"[Mesh]) **Search**

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631 results Page of 13

- [Aspirin-induced asthma: a still evolving area of basic and clinical research.](#)
- 1 Sanak M.
- [Pub Arch Intern Med. 2022 Feb 28;132\(2\):16219. doi: 10.20452/pamw.16219. Epub 2022 Feb 28.](#)



("Asthma/chemically induced"[Mesh]) AND "Aspirin/adverse effects"[Mesh]

Search

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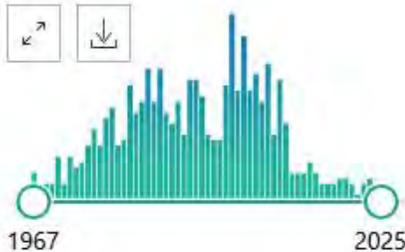
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RESULTS BY YEAR



PUBLICATION DATE

- 1 year
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- 10 years
- Custom Range

634 results

Page 1 of 7

1 Should Biologics Be Used Before Aspirin Desensitization in Aspirin-Exacerbated Respiratory Disease?

Cite Laidlaw TM, White AA.

J Allergy Clin Immunol Pract. 2024 Jan;12(1):79-84. doi: 10.1016/j.jaip.2023.09.019. Epub 2023 Sep 29.

Share PMID: 37778627 [Free PMC article.](#) Review.

2 Aspirin-exacerbated respiratory disease: Updates in the era of biologics.

Cite Mullur J, Buchheit KM. Ann Allergy Asthma Immunol. 2023 Sep;131(3):317-324. doi: 10.1016/j.anai.2023.05.016. Epub 2023 May 22.

Share PMID: 37225000 [Free PMC article.](#) Review.

3 Aspirin desensitization following endoscopic sinus surgery is effective in patients with nonsteroidal antiinflammatory drug exacerbated respiratory disease.

Cite Aydin Ö, Atmiş EÖ, Anadolu Y, Yorulmaz İ, Çelik GE.



Add terms to the query box

All Fields

AND

Show Index

Query box

(("Asthma/chemically induced"[Mesh]) AND "Aspirin/adverse effects"[Mesh]) OR ("Asthma, Aspirin-Induced"[Mesh])

Search

History and Search Details

Search	Actions	Details	Query	Results	Time
#2	...	>	Search: (" Asthma/chemically induced "[Mesh]) AND " Aspirin/adverse effects "[Mesh] Sort by: Most Recent	634	20:57:37
#1	...	>	Search: " Asthma, Aspirin-Induced "[Mesh] Sort by: Most Recent	537	20:53:56

Showing 1 to 2 of 2 entries





Search: ("Asthma/chemically induced"[Mesh]) AND "Aspirin/adverse effects"[Mesh] × **Search**

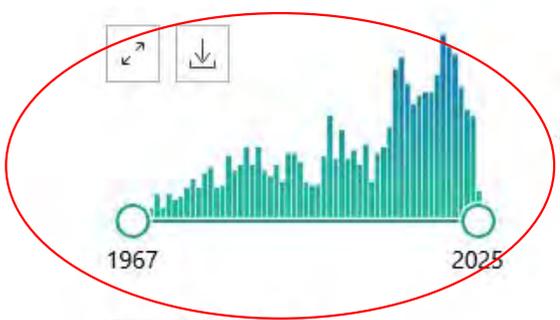
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RESULTS BY YEAR



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1 **Dupilumab Treatment for Aspirin-Exacerbated Respiratory Disease in a Real-World Setting: Impact on Quality of Life and Healthcare Utilization.**
 Cite Muller J, Maurer R, Ryan T, McGill A, Bensko JC, Laidlaw TM, Buchheit KM.
 Am J Rhinol Allergy. 2025 Mar;39(2):90-97. doi: 10.1177/19458924241298817. Epub 2024 Nov 22.
 Share PMID: 39574218

2 **The Hidden "Ear-Way": A Cohort Analysis of Otologic Manifestations in Aspirin Exacerbated Respiratory Disease.**
 Cite Pellizzari RA, Wei J, Saba E, Shah S, Greene L, Tran QL, Debbaneh P, Rivero A.
 Ann Otol Rhinol Laryngol. 2025 Mar;134(3):211-217. doi: 10.1177/00034894241297943. Epub 2024 Nov 21.
 Share PMID: 39573932

3 **Update on aspirin exacerbated respiratory disease with chronic rhinosinusitis.**
 Gandre JR, Ledford DK.



Review > [Respir Med.](#) 2018 Feb;135:62-75. doi: 10.1016/j.rmed.2018.01.002. Epub 2018 Jan 10.

Aspirin exacerbated respiratory disease: Current topics and trends

José Carlos Rodríguez-Jiménez ¹, Fernanda Judith Moreno-Paz ¹, Luis Manuel Terán ², Eduardo Guaní-Guerra ³

Affiliations + expand

PMID: 29414455 DOI: [10.1016/j.rmed.2018.01.002](https://doi.org/10.1016/j.rmed.2018.01.002)

Free article

Abstract

Aspirin-exacerbated respiratory disease is a chronic and treatment-resistant disease, characterized by the presence of eosinophilic rhinosinusitis, nasal polyposis, bronchial asthma, and nonsteroidal anti-inflammatory drugs hypersensitivity. Alterations in arachidonic acid metabolism may induce an

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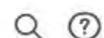
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Respiratory Medicine

Volume 135, February 2018, Pages 62-75



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Aspirin exacerbated respiratory disease: Current topics and trends

[José Carlos Rodríguez-Jiménez](#)^{a,1}, [Fernanda Judith Moreno-Paz](#)^{a,1}, [Luis Manuel Terán](#)^b, [Eduardo Guaní-Guerra](#)^{a,c}

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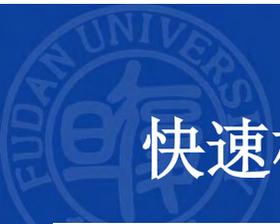
几种检索方法的对比

查找“厄洛替尼治疗肺癌”的文章。（此实例仅为比较几种检索方法的查全和查准率，未包含所有关键词。一般开题研究时需要尽量找全各个词不同写法和综合多种检索式；跟踪研究时选用主题词检索）

词1: erlotinib

词2: lung cancer





快速检索

1. 快速检索，在快速检索栏输入「lung cancer, erlotinib」点击 search

Search: **erlotinib lung cancer** Sort by: **Most Recent**

4,877

2. 快速检索，给 lung cancer 和 erlotinib 分别加上引号进行检索

Search: "**erlotinib**" "**lung cancer**" Sort by: **Most Recent**

4,218



3. 高级检索

Add terms to the query box

Title/Abstract

Query box

"lung cancer"[Title/Abstract] AND "erlotinib"[Title/Abstract]

Search: **(lung cancer[Title/Abstract]) AND (erlotinib[Title/Abstract])**

3,840

Sort by: **Most Recent**



4. Clinical Queries

lung cancer × **Search**

Filter category

Clinical Studies
 COVID-19

Clinical Queries filters were developed by [Haynes RB et al.](#) to facilitate retrieval of clinical studies.

Filter

Therapy ▾

[See Clinical Queries filter details.](#)

Scope

Broad ▾

Returns more results: less specific, but more comprehensive. [See filter details.](#)

(lung cancer) AND (Therapy/Broad[filter]) erlotinib × **Search**

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3,383 results ⏪ < Page 1 of 68 > ⏩



5. Mesh 检索

MeSH [Limits](#) [Advanced](#) [Help](#)

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Lung Neoplasms

Tumors or cancer of the LUNG.

PubMed search builder options

Subheadings:

<input type="checkbox"/> blood	<input type="checkbox"/> embryology	<input type="checkbox"/> pathology
<input type="checkbox"/> blood supply	<input type="checkbox"/> enzymology	<input type="checkbox"/> physiopathology
<input type="checkbox"/> cerebrospinal fluid	<input type="checkbox"/> epidemiology	<input type="checkbox"/> prevention and control
<input type="checkbox"/> chemically induced	<input type="checkbox"/> ethnology	<input type="checkbox"/> psychology
<input type="checkbox"/> chemistry	<input type="checkbox"/> etiology	<input type="checkbox"/> radiotherapy
<input type="checkbox"/> classification	<input type="checkbox"/> genetics	<input type="checkbox"/> rehabilitation
<input type="checkbox"/> complications	<input type="checkbox"/> history	<input type="checkbox"/> secondary
<input type="checkbox"/> congenital	<input type="checkbox"/> immunology	<input type="checkbox"/> surgery
<input type="checkbox"/> diagnosis	<input type="checkbox"/> metabolism	<input type="checkbox"/> therapy
<input type="checkbox"/> diagnostic imaging	<input type="checkbox"/> microbiology	<input type="checkbox"/> ultrastructure
<input type="checkbox"/> diet therapy	<input type="checkbox"/> mortality	<input type="checkbox"/> urine
<input checked="" type="checkbox"/> drug therapy	<input type="checkbox"/> nursing	<input type="checkbox"/> veterinary
<input type="checkbox"/> economics	<input type="checkbox"/> parasitology	<input type="checkbox"/> virology

Restrict to MeSH Major Topic.
 Do not include MeSH terms found below this term in the MeSH hierarchy.

Tree Number(s): C04.588.894.797.520, C08.381.540, C08.785.520

PubMed Search Builder ▲

"Lung Neoplasms/drug therapy" [Mesh]

▾

[YouTube Tutorial](#)

Related information ▲

PubMed

PubMed - Major Topic

Clinical Queries

NLM MeSH Browser

dbGaP Links

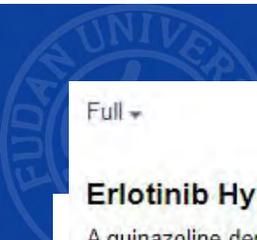
MedGen

Recent Activity ▲

[Turn Off](#) [Clear](#)

Lung Neoplasms MeSH





Full ▾

Send to: ▾

Erlotinib Hydrochloride

A quinazoline derivative and ANTINEOPLASTIC AGENT that functions as a PROTEIN KINASE INHIBITOR for EGFR associated tyrosine kinase. It is used in the treatment of NON-SMALL CELL LUNG CANCER.

Year introduced: 2016 (1999)

PubMed search builder options

Subheadings:

- | | | |
|-----------------------------------------------------|----------------------------------------------------------|-----------------------------------------------------|
| <input type="checkbox"/> administration and dosage | <input type="checkbox"/> cerebrospinal fluid | <input type="checkbox"/> pharmacokinetics |
| <input type="checkbox"/> adverse effects | <input type="checkbox"/> chemical synthesis | <input type="checkbox"/> pharmacology |
| <input type="checkbox"/> analogs and derivatives | <input type="checkbox"/> chemistry | <input type="checkbox"/> physiology |
| <input type="checkbox"/> analysis | <input type="checkbox"/> economics | <input type="checkbox"/> standards |
| <input type="checkbox"/> antagonists and inhibitors | <input type="checkbox"/> metabolism | <input checked="" type="checkbox"/> therapeutic use |
| <input type="checkbox"/> blood | <input type="checkbox"/> organization and administration | <input type="checkbox"/> toxicity |

Restrict to MeSH Major Topic.

Do not include MeSH terms found below this term in the MeSH hierarchy.

Tree Number(s): D03.633.100.786.375

MeSH Unique ID: D000069347

Registry Number: DA87705X9K

PubMed Search Builder

"Erlotinib Hydrochloride/therapeutic use" [Mesh]

Add to search builder AND ▾

Search PubMed

YouTube Tutorial

Related information

PubMed

PubMed - Major Topic

Clinical Queries

NLM MeSH Browser

PubChem Compound

Recent Activity

Query

Results

Search: ("Lung Neoplasms"[Mesh]) AND ("Erlotinib Hydrochloride/therapeutic use"[Mesh]) Sort by: Publication Date

879



检索式的选择

开题时：

#1 "Lung Neoplasms"[Mesh]

#2 lung cancer*[TIAB] OR lung tumor*[TIAB] OR lung carcinoma*[TIAB] OR lung neoplasm*[TIAB] OR pulmonary cancer*[TIAB] OR pulmonary tumor*[TIAB] OR pulmonary carcinoma*[TIAB] OR pulmonary neoplasm*[TIAB]

#3 #1 OR #2

#4 "Erlotinib Hydrochloride"[Mesh]

#5 Erlotinib[TIAB] OR 11C-erlotinib[TIAB] OR OSI-774 [TIAB] OR OSI774[TIAB] OR CP 358774[TIAB] OR CP 358,774[TIAB] OR Tarceva[TIAB] OR "N-(3-ethynylphenyl)-6,7-bis(2-methoxyethoxy)quinazolin-4-amine"[TIAB]

#6 #4 OR #5

#7 #3 AND #6 (4,793 results)

文献追踪：

#0 "erlotinib hydrochloride/therapeutic use"[MeSH Terms] AND "lung neoplasms/drug therapy"[MeSH Terms] AND "last 30 days"[mhda] (最近30天新增标引文献)



临床研究相关

sensitivity-maximizing : (pubmed)

- #1 randomized controlled trial[pt]
- #2 controlled clinical trial[pt]
- #3 randomized[tiab]
- #4 placebo [tiab]
- #5 drug therapy [sh]
- #6 randomly [tiab]
- #7 trial [tiab]
- #8 groups [tiab]
- #9 #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8
- #10 animals [mh] not humans [mh]
- #11 #9 not #10

- #1 randomized controlled trial[pt]
- #2 controlled clinical trial[pt]
- #3 randomized[tiab]
- #4 placebo[tiab]
- #5 clinical trials as topic[mesh: noexp]
- #6 randomly[tiab]
- #7 trial[ti]
- #8 #1 or #2 or #3 or #4 or #5 or #6 or #7
- #9 animals [mh] not humans [mh]
- #10 #8 not #9

sensitivity and precision-maximizing

'Tamoxifen for breast cancer'

#12 Breast Neoplasms[mh]

#13 breast cancer*[tiab]

#14 breast neoplasm*[tiab]

#15 breast carcinoma*[tiab]

#16 breast tumour*[tiab]

#17 breast tumor*[tiab]

#18 12 OR 13 OR 14 OR 15 OR 16 OR 17

#19 Tamoxifen[mh]

#20 tamoxifen[tiab]

#21 nolvadex[tiab]

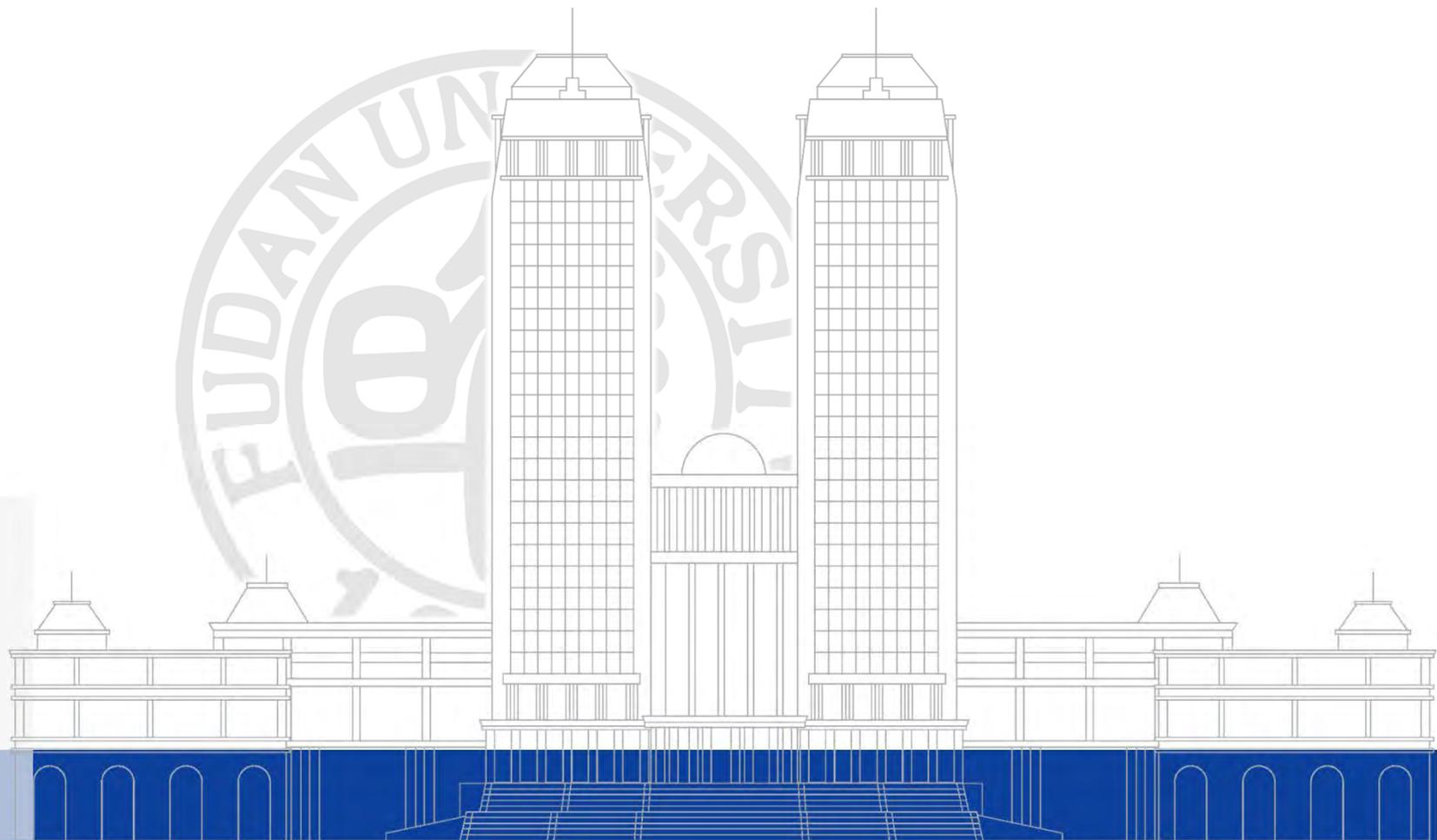
#22 zitazonium[tiab]

#23 19 OR 20 OR #21 OR #22

#24 11 and 18 and 23



04



其他

4.1 PubMed Clinical Queries(临床查询)



Learn

About PubMed
FAQs & User Guide
Finding Full Text



Find

Advanced Search
Clinical Queries
Single Citation Matcher



Download

E-utilities API
FTP
Batch Citation Matcher



Explore

MeSH Database
Journals





PubMed Clinical Queries

This tool uses [predefined filters](#) to help you quickly refine PubMed searches on clinical or disease-specific topics. To use this tool, enter your search terms in the search bar and select filters before searching.

Note: The Systematic Reviews filter has moved; it is now an option under the "Article Type" filter on the main PubMed search results page.

Filter category

Clinical Studies
 COVID-19

Clinical Queries filters were developed by [Haynes RB et al.](#) to facilitate retrieval of clinical studies.

Filter

Therapy

- Therapy
- Clinical Prediction Guides
- Diagnosis
- Etiology
- Prognosis

Scope

Broad

Broad
Narrow results: less specific, but more comprehensive. [See filter details.](#)

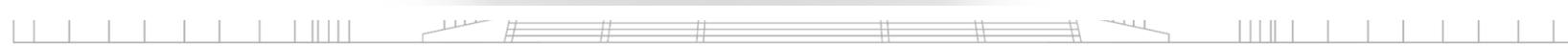




表1 临床查询中研究类型的过滤器细节以及敏感度特异度

分类	优化方向	敏感度/ 特异度	检索过滤器解析
治疗	敏感度/宽	99%/70%	((clinical[Title/Abstract] AND trial[Title/Abstract]) OR clinical trials as topic[MeSH Terms] OR clinical trial[Publication Type] OR random*[Title/Abstract] OR random allocation[MeSH Terms] OR therapeutic use[MeSH Subheading])
	特异度/窄	93%/97%	(randomized controlled trial[Publication Type] OR (randomized[Title/Abstract] AND controlled[Title/Abstract] AND trial[Title/Abstract]))
诊断	敏感度/宽	98%/74%	(sensitivity*[Title/Abstract] OR sensitivity and specificity[MeSH Terms] OR diagnose[Title/Abstract] OR diagnosed[Title/Abstract] OR diagnoses[Title/Abstract] OR diagnosing[Title/Abstract] OR diagnosis[Title/Abstract] OR diagnostic[Title/Abstract] OR diagnosis[MeSH:noexp] OR diagnostic*[MeSH:noexp] OR diagnosis differential[MeSH:noexp] OR diagnosis[MeSH:noexp])
	特异度/窄	64%/98%	(specificity[Title/Abstract])
病因	敏感度/宽	93%/63%	(risk*[Title/Abstract] OR risk*[MeSH:noexp] OR risk*[MeSH:noexp] OR cohort studies[MeSH Terms] OR group[Text Word] OR groups[Text Word] OR grouped [Text Word])
	特异度/窄	51%/95%	((relative[Title/Abstract] AND risk*[Title/Abstract]) OR (relative risk[Text Word]) OR risks[Text Word] OR cohort studies[MeSH:noexp] OR (cohort[Title/Abstract] AND study[Title/Abstract]) OR (cohort[Title/Abstract] AND studies[Title/Abstract]))
预后	敏感度/宽	90%/80%	(incidence[MeSH:noexp] OR mortality[MeSH Terms] OR follow up studies[MeSH:noexp] OR prognos*[Text Word] OR predict*[Text Word] OR course*[Text Word])
	特异度/窄	52%/94%	(prognos*[Title/Abstract] OR (first[Title/Abstract] AND episode[Title/Abstract]) OR cohort[Title/Abstract])
临床预测指南	敏感度/宽	96%/79%	(predict*[tiab] OR predictive value of tests[mh] OR score[tiab] OR scores[tiab] OR scoring system[tiab] OR scoring systems[tiab] OR observ*[tiab] OR observer variation[mh])
	特异度/窄	54%/99%	(validation[tiab] OR validate[tiab])

<https://www.ncbi.nlm.nih.gov/pubmed/?term=20671080>



Category	Optimized for	Sensitive/ Specific	PubMed equivalent
Therapy	sensitive/broad	99%/70%	((clinical[Title/Abstract] AND trial[Title/Abstract]) OR clinical trials as topic[MeSH Terms] OR clinical trial[Publication Type] OR random* [Title/Abstract] OR random allocation[MeSH Terms] OR therapeutic use[MeSH Subheading])
	specific/narrow	93%/97%	(randomized controlled trial[Publication Type] OR (randomized[Title/Abstract] AND controlled[Title/Abstract] AND trial[Title/Abstract]))





Diagnosis	sensitive/broad	98%/74%	(sensitiv*[Title/Abstract] OR sensitivity and specificity[MeSH Terms] OR diagnose[Title/Abstract] OR diagnosed[Title/Abstract] OR diagnoses[Title/Abstract] OR diagnosing[Title/Abstract] OR diagnosis[Title/Abstract] OR diagnostic[Title/Abstract] OR diagnosis[MeSH:noexp] OR (diagnostic equipment[MeSH:noexp] OR diagnostic errors[MeSH:noexp] OR diagnostic imaging[MeSH:noexp] OR diagnostic services[MeSH:noexp])) OR diagnosis, differential[MeSH:noexp] OR diagnosis[Subheading:noexp])
	specific/narrow	64%/98%	(specificity[Title/Abstract])



Etiology	sensitive/broad	93%/63%	(risk*[Title/Abstract] OR risk*[MeSH:noexp] OR (risk adjustment[MeSH:noexp] OR risk assessment[MeSH:noexp] OR risk factors[MeSH:noexp] OR risk management[MeSH:noexp] OR risk taking[MeSH:noexp]) OR cohort studies[MeSH Terms] OR group[Text Word] OR groups[Text Word] OR grouped [Text Word])
	specific/narrow	51%/95%	((relative[Title/Abstract] AND risk*[Title/Abstract]) OR (relative risk[Text Word]) OR risks[Text Word] OR cohort studies[MeSH:noexp] OR (cohort[Title/Abstract] AND study[Title/Abstract]) OR (cohort[Title/Abstract] AND studies[Title/Abstract]))





Prognosis	sensitive/broad	90%/80%	(incidence[MeSH:noexp] OR mortality[MeSH Terms] OR follow up studies[MeSH:noexp] OR prognos*[Text Word] OR predict*[Text Word] OR course*[Text Word])
	specific/narrow	52%/94%	(prognos*[Title/Abstract] OR (first[Title/Abstract] AND episode[Title/Abstract]) OR cohort[Title/Abstract])
Clinical Prediction Guides	sensitive/broad	96%/79%	(predict*[Title/Abstract] OR predictive value of tests[MeSH Terms] OR score[Title/Abstract] OR scores[Title/Abstract] OR scoring system[Title/Abstract] OR scoring systems[Title/Abstract] OR observ*[Title/Abstract] OR observer variation[MeSH Terms])
	specific/narrow	54%/99%	(validation[Title/Abstract] OR validate[Title/Abstract])



临床查询的优缺点

- 临床查询通过结构化的检索式和交互界面，可以在一定程度上提高工作效率。临床查询通过综合使用主题词、关键词和字段限定检索，保证了查全和查准率。
- 设定栏目的检索策略，是随着学科的发展和PubMed数据库的更新不断更新的。
- 临床查询已经定制的内容不能灵活的修改，仅能检索定制的栏目内容。如果需要检索其他研究方向的内容，可以参考临床查询中已经制定好的三个检索式的思路，制定自己的检索策略或者结合My NCBI的自定义过滤器功能定制常用的、适合自己的过滤器。



4.2 Open-i

- <https://openi.nlm.nih.gov>
- 国家医学图书馆的Open-i服务支持从开放源码文献和生物医学图像集合中搜索和检索摘要和图像(包括图表、图表、临床图像等)。搜索可以使用文本查询和查询图像来完成。
- Open-i提供了对PubMed中心120万篇文章中370多万幅图像的访问; 7,470例胸部x光片, 3955例放射学报告;67517幅图像来自NLM医学收藏的历史;2064幅骨科插图。





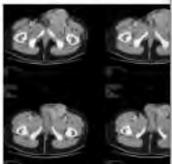
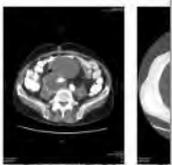
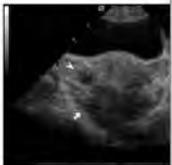
OPEN

Search by text or dropping an image.

View as

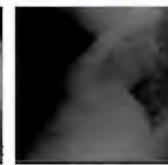
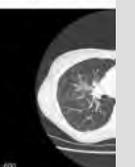
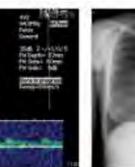
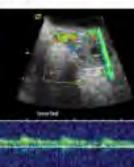
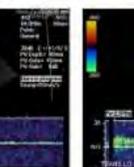
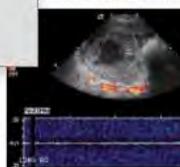
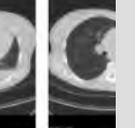
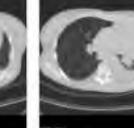
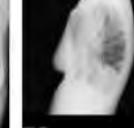
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Rank By: Diagnosis



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- Oration
- Reply
- Research Article
- Review Article
- Systematic Review
- Radiology Report
- Orthopedic Slide
- Historical Slide
- Others

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 - Graphics
 - MRI
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 - Ultrasound
 - Video
 - X-ray
-
- Exclude Graphics
 - Exclude Multipanel

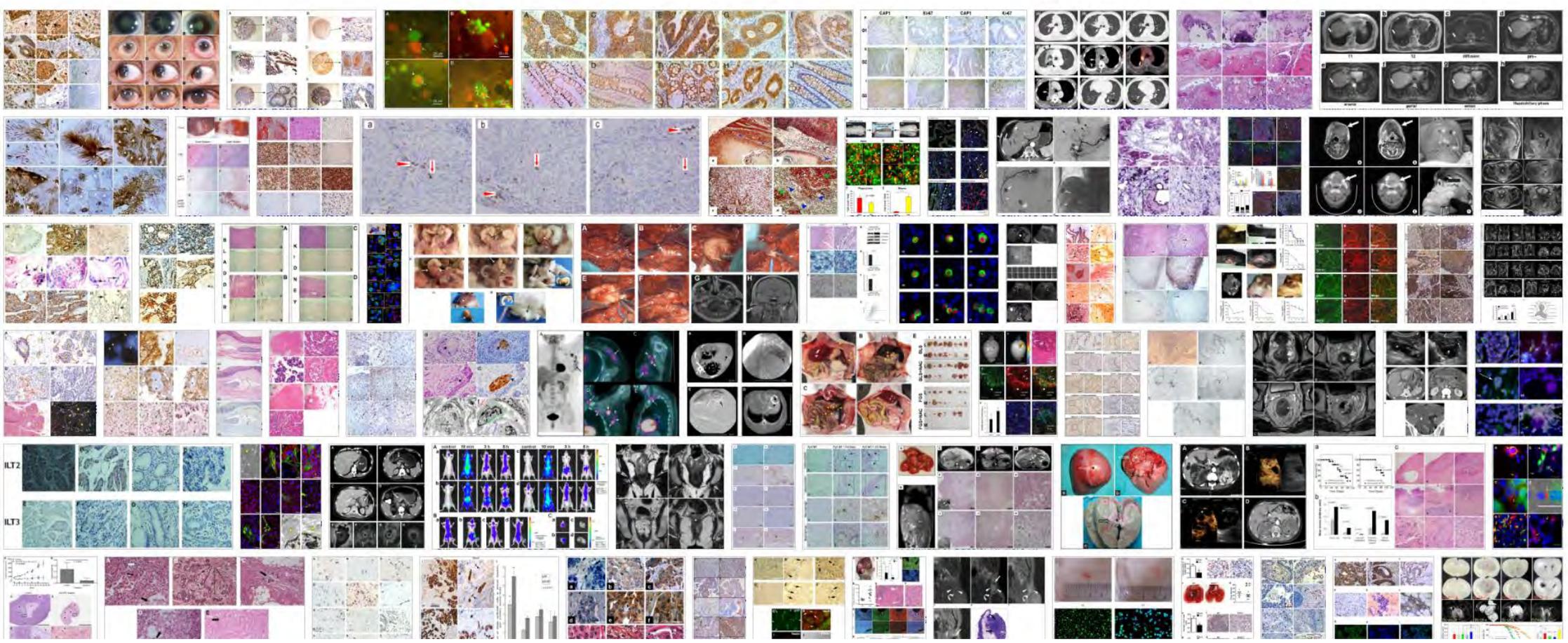


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- History of Medicine Publication Type >

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- Dermatology
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- Immunology
- Infectious Diseases
- Internal Medicine
- Nephrology
- Neurology
- Nursing
- Ophthalmology
- Orthopedics
- Otolaryngology
- Pediatrics
- Psychiatry
- Pulmonary Diseases
- Rheumatology
- Surgery
- Toxicology
- Urology
- Vascular Diseases
- Virology

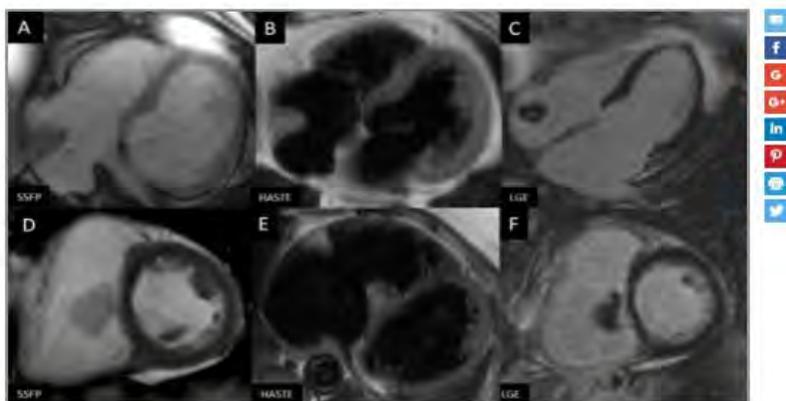


Search Term: cancer  Image Type: Exclude Graphics 



Thrombus can enhance on delayed enhancement imaging

[Journal of Cardiovascular Magnetic Resonance](#)



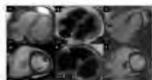
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License1 License2

F1: Images A-C: CMR demonstrating a mass with mild delayed enhancement suggestive of myxoma, later proven to be thrombus; Images D-F: CMR demonstrating a mass diagnosed as myxoma, confirmed pathologically.

[View Article: PubMed Central - HTML](#)

Additional Figures: [Article](#) [Collection](#) [Results](#)



Automatically Generated Excerpt

To examine the diagnostic accuracy of cardiac magnetic resonance imaging (CMR) in differentiating thrombus from myxoma Thrombus is thought not to enhance on CMR, myxomas are thought to show mild heterogenous enhancement on delayed imaging... It is sometimes difficult to differentiate them, and this may lead to misdiagnosis, which would significantly impact treatment... Thrombi can have varying signal intensities depending on their age and fibrous composition in T1 and T2 imaging... Analysis of a total of 46 masses diagnosed as myxoma or thrombus on CMR were compared with histopathology reports or follow up imaging to determine the diagnostic accuracy of CMR... All patients underwent CMR on a 1.5 Tesla scanner with EKG gating following the same protocol... Of the 46 masses reviewed, sixteen masses were diagnosed as myxoma on CMR, while post-operative pathology reports revealed 11 of these to be myxomas, 4 were found to be thrombi, and 1 was an artifact associated with mitral valve prosthesis... Delayed enhancement is one of the important factors distinguishing a myxoma from a thrombus... However we found in our study that some thrombi may show mild delayed enhancement because of varying tissue composition and result in a misdiagnosis... CMR evaluation can also be difficult in the presence of artifacts (motion, valve prosthesis, intracardiac leads) and arrhythmias... Thrombi may show patchy enhancement on delayed imaging and can be confused as atrial myxoma on CMR.

+ Mentions

+ MeSH

Related in: [MedlinePlus](#)



4.3 pubtator3

<https://www.ncbi.nlm.nih.gov/research/pubtator3/>

- PubTator 3.0是一款结合了先进人工智能技术的生物医学文献搜索工具。
- 专注于**蛋白质、遗传变异、疾病和化学物质**等关键生物医学概念的语义及关联性搜索。
- 累积提供超过十亿个实体和关系的注释，覆盖约3,600万篇PubMed摘要和600万篇PMC开放获取的全文文章，每周更新。

◆ @CHEMICAL_Dimethylnitrosamine AND @CHEMICAL_Metformin

◆ @DISEASE_COVID_19 AND @GENE_PON1

◆ @VARIANT_p.V600E_BRAF_human

Entity Type	Terminology
Gene	NCBI Gene
Disease	MeSH (Medical Subject Headings)
Chemical	MeSH (Medical Subject Headings)
Variant	dbSNP, if possible, otherwise HGNC format
Species	NCBI Taxonomy
Cell Line	CellSaurus



4.3 pubtator3

The screenshot displays the PubTator3 web interface. At the top, the logo 'PubTator³' is on the left, and 'NIH NLM' is in the center. On the right, there are links for 'FTP', 'API', and 'Tutorial'. A navigation menu on the left includes 'Home', 'Saved', and 'Playlists'. The main content area features a search bar with the placeholder text 'Ex: Remdesivir' and a search icon. Below the search bar, a suggestion reads 'Try: N-dimethylnitrosamine and Metformin COVID-19 and PON1'. Three feature cards are shown below: 'Entities Autocomplete' with a diagram showing 'Can' and 'Neoplasms' connected to icons of test tubes, a DNA helix, and a doctor; 'Full Text Search' with an image of an open book titled 'PubTator3: an improved search engine'; and 'Relations' with a diagram showing a doctor, test tubes, and a DNA helix connected by dashed lines.

PubTator³ NIH NLM FTP API Tutorial

Home Saved Playlists

Search entities & relations in 35+ million biomedical publications.

Ex: Remdesivir

Try: N-dimethylnitrosamine and Metformin COVID-19 and PON1

Entities Autocomplete

PubTator3 uses a high-performance entities search engine, to normalize different forms of the same entity into a unique standardized name to returned all matching articles.

Full Text Search

PubTator3 provides unified access to the entire 35+ million abstracts in PubMed and nearly 6 million full-text articles in the PMC Text Mining subset.

Relations

PubTator3 allows to filter results to only return publications containing specific relations between two entities, such as diseases, chemicals, genes or variants.



Home

Saved

Playlists

SECTIONS

- TITLE
- ABSTRACT
- INTRODUCTION
- METHODS
- RESULTS
- DISCUSSION
- CONCLUSION

JOURNALS

- INT J MOL SCI 7
- J PHARM BIOMED ANAL 7
- FRONT PHARMACOL 6
- CANCERS (BASEL) 4
- AAPS J 3

PUBLICATION TYPE

- JOURNAL ARTICLE 138
- REVIEW 55
- LETTER 2
- COMMENT 1
- META-ANALYSIS 1

Showing 1 to 10 of 143 publications.

SORT BY **RELEVANCE** REGENCY

< Page 1 of 15 >

PMID33849366 • FullText Link

Jul 1, 2021

Investigating the root cause of N-nitrosodimethylamine formation in metformin pharmaceutical products.

Nasr NEH, Metwaly MG ... EIMeshad AN • Expert Opin Drug Saf

Investigating the root cause of **N-nitrosodimethylamine** formation in **metformin** pharmaceutical products.

Save Share Cite Download Add To Playlist

PMID33422831 • FullText Link

Feb 20, 2021

Insight into the formation of N-nitrosodimethylamine in metformin products.

Jireš J, Kalášek S ... Řezanka P • J Pharm Biomed Anal

Insight into the formation of **N-nitrosodimethylamine** in **metformin** products.

Save Share Cite Download Add To Playlist

PMID37031864 • FullText Link

Apr 7, 2023

Dispersant-first dispersive liquid-liquid microextraction (DF-DLLME), a novel sample preparation procedure for NDMA determination in metformin products.

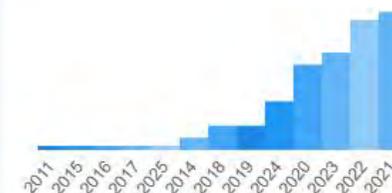
Géhin C, O'Neill N ... Blom G • J Pharm Sci

Dispersant-first dispersive liquid-liquid microextraction (DF-DLLME), a novel sample preparation procedure for **NDMA** determination in **metformin** products.

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DOWNLOAD

YEARS

SHOW BIOCONCEPTS

- GENE
- DISEASE
- CHEMICAL
- VARIANT
- SPECIES
- CELLLINE

4.4 Pubmed插件

- EasyPubMed （谷歌和 Edge 的插件商店）
- easyScholar （火狐、谷歌、Edge）
- Pubmed Impact Factor （火狐、谷歌、Edge）

1 Epidemiological characteristics and initial spatiotemporal visualisation of **COVID-19** in a major city in the Middle East. **SWJTU A** **SCIIF 3.295** **SCI升级版 医学3区**

Cite **SCI基础版 医学3区** **SCI Q2** **XJU 二区** **CUG 医学T3**

Share MohammadEbrahimi S, Mohammadi A, Bergquist R, Dolatkah F, Olia M, Tavakolian A, Pishgar E, Kiani B. BMC Public Health. 2021 Jul 12;21(1):1373. doi: 10.1186/s12889-021-11326-2. PMID: 34247616 **Free PMC article.**

BACKGROUND: The **Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2)** emerged initially in **China** in December **2019** causing the **COVID-19 disease**, which quickly spread worldwide. ...

Q2 IF: 3.295 Cited by: 5 Sci-Hub Link PDF(Full Text) Citation Collect

2 **Case Fatality Risk of the First Pandemic Wave of Coronavirus Disease 2019 (COVID-19) in China.** **SWJTU A++** **NJU A** **SCIIF 9.079** **SCI升级版 医学1区**

Cite **SCI基础版 医学1区** **SCI Q1** **XJU 一区** **CUG 医学T1**

Share Deng X, Yang J, Wang W, Wang X, Zhou J, Chen Z, Li J, Chen Y, Yan H, Zhang J, Zhang Y, Wang Y, Qiu Q, Gong H, Wei X, Wang L, Sun K, Wu P, Ajelli M, Cowling BJ, Viboud C, Yu H. Clin Infect Dis. 2021 Jul 1;73(1):e79-e85. doi: 10.1093/cid/ciaa578. PMID: 32409826 **Free PMC article.**

BACKGROUND: To assess the **case fatality risk (CFR)** of **COVID-19** in mainland **China**, stratified by region and clinical category, and estimate key time-to-event intervals. ...Our study provides a comprehensive picture of the severity of the ...



1. 工具条
2. 翻译功能
3. 文章筛选

Pluripotent Stem **Cell** Heterogeneity 

1 Hayashi Y, Ohnuma K, Furue MK.

Cite Adv Exp Med Biol. 2019;1123:71-94. doi: 10.1007/978-3-030-11096-3_6.

PMID: 31016596 Review.

Share PSC heterogeneity may exist among **cell** lines, among **cells** within a line, and among temporal states of individual **cells**. Both genetic and epigenetic factors can cause heterogeneity among **cell** lines.
Heterogeneity among **cells** within a **cell** ... 



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Review > Adv Exp Med Biol. 2019;1123:71-94. doi: 10.1007/978-3-030-11096-3_6.

Pluripotent Stem Cell Heterogeneity

Yohei Hayashi ¹, Kiyoshi Ohnuma ^{2 3}, Miho K Furue ⁴

Affiliations [+](#) expand

PMID: 31016596 DOI: 10.1007/978-3-030-11096-3_6

Abstract

Pluripotent stem cells (PSCs), including embryonic stem cells and induced pluripotent stem cells, show heterogeneity with respect to their pluripotency, self-renewal ability, and other traits. PSC heterogeneity may exist among cell lines, among cells within a line, and among temporal states of individual cells. Both genetic and epigenetic factors can cause heterogeneity among cell lines. Heterogeneity among cells within a cell line may arise during long-term culturing even when a PSC cell line is derived from a single cell. Moreover, the expression levels of genes and proteins in PSCs fluctuate continuously at a frequency ranging from a few hours to a few days. Such heterogeneity decreases the reproducibility of research. Thus, methods related to the detection, reduction, and control of heterogeneity in experiments involving human PSCs need to be developed. Further, the presupposition that PSCs are highly heterogeneous should be taken into account by all researchers not only when they plan their own studies but also when they review the studies of other researchers in this field. 

Keywords: Embryonic stem cells (ESCs); Human embryonic stem cells (hESCs); Human pluripotent stem cells (hPSCs); Human pluripotent stem cells (hiPSCs); Induced pluripotent stem cells (iPSCs); Pluripotent stem cells (PSCs).



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Stem **cell** dynamics, migration and plasticity during wound healing.

2

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NJU 学科群一流期刊

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Cite Dekoninck S, Blanpain C.

Nat Cell Biol. 2019 Jan;21(1):18-24. doi: 10.1038/s41556-018-0237-6. Epub 2019 Jan 2.

Share

PMID: 30602767 Review.

The skin epidermis is particularly exposed to injuries, which necessitates rapid repair. The coordinated action of distinct epidermal stem **cells** recruited from various skin regions together with other **cell** types, including fibroblasts and immune **cells**, is req ...

› [Genes Cells](#). 2019 Dec;24(12):836-847. doi: 10.1111/gtc.12731. Epub 2019 Nov 17.

Single-cell study of neural stem cells derived from human iPSCs reveals distinct progenitor populations with neurogenic and gliogenic potential 来自人类 iPSC 的神经干细胞的单细胞研究揭示了具有神经源性和胶质细胞生成潜力的不同祖细胞群





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Pluripotent Stem **Cell** Heterogeneity.

1 Hayashi Y, Ohnuma K, Furue MK.

Cite **Adv Exp Med Biol** (IF: 2.45; **Q2**). 2019;1123:71-94. doi: 10.1007/978-3-030-11096-3_6.
PMID: 31016596 Review.

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Review

> **Adv Exp Med Biol** (IF: 2.45; Q2). 2019;1123:71-94. doi: 10.1007/978-3-030-11096-3_6.

Pluripotent Stem Cell Heterogeneity

Yohei Hayashi ¹, Kiyoshi Ohnuma ^{2 3}, Miho K Furue ⁴

Affiliations + expand

PMID: 31016596 DOI: 10.1007/978-3-030-11096-3_6

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- 不得直接使用未经核实的由生成式人工智能生成的参考文献。

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- ◆可用于研究过程的统计分析，所分析的数据必须是作者在科研活动中产生或收集的真实数据，作者对所选择的建模和检验方法负责，并且作者应对AI统计分析结果进行其他途径的测试验证，确保统计结果的可靠性和准确性；
- ◆可用于论文的语言润色，不同语种的翻译，提升论文的可读性，作者可参考但不能直接照搬AI提供的写作风格，应保证论文具有个人或共同署名作者的写作特点。
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SuperCLUE总排行榜 (2025年7月)

排名 ▲	模型名称 ▲	机构 ▲	开源/闭源 ▲	总分 ▲	数学推理 ▲	科学推理 ▲	代码生成 ▲	智能体Agent ▲	精确指令遵循 ▲
-	GPT-5(high)	OpenAI	闭源	75.34	76.86	54.2	87.92	83.21	66.77
-	o3(high)	OpenAI	闭源	73.78	81.6	59.7	83.76	76.12	64.09
-	o4-mini(high)	OpenAI	闭源	73.32	76.34	55.56	86.14	86.36	59.64
-	Gemini-2.5-Pro	Google	闭源	68.98	74.05	52.59	82.38	82.09	39.76
🏆	Doubao-Seed-1.6-thinking-250715	字节跳动	闭源	68.04	70.77	40.49	84.36	90.67	32.34
-	Claude-Opus-4-Reasoning	Anthropic	闭源	67.02	60.16	45.93	80.4	80.6	44.81
🏆	DeepSeek-R1-0528	深度求索	开源	66.15	75	48.15	74.06	82.09	35.31
-	Gemini-2.5-Flash	Google	闭源	64.96	65.89	44.44	73.86	82.09	34.12
-	grok-4	X.AI	闭源	64.84	69.11	44.44	82.18	83.71	29.97
🏆	Qwen3-235B-A22B-Thinking-2507	阿里巴巴	开源	64.34	68.7	42.22	81.78	74.25	43.62
🏆	Hunyuan-T1-20250711	腾讯	闭源	63.73	68.7	37.78	73.27	76.49	42.73
4	GLM-4.5	智谱AI	开源	63.25	66.67	44.62	79.01	83.58	27.22
5	Qwen3-235B-A22B-Instruct-2507	阿里巴巴	开源	60.79	64.57	41.48	78.42	80.97	24.93
5	SenseNova V6 Reasoner	商汤	闭源	60.73	63.36	40	80.2	83.58	21.66
-	gpt-oss-120b	OpenAI	开源	59.35	67.18	47.41	72.28	72.76	41.25

常用的AI工具

- 文心一言：中文智能的集大成者

文心一言技术实力源于三大支柱：超大规模中文语料库的持续训练、多模态融合架构的创新突破、行业知识图谱的深度整合。

- 深度求索R1：效率革命的算力魔术师

深度求索团队通过强化学习与模型蒸馏技术的协同创新，在保持GPT-4 Turbo级数学推理能力的前提下，将模型参数量压缩至1/10。

- 月之暗面Kimi：长文本处理的学术灯塔

Kimi模型突破性地支持20万汉字上下文处理，为学术研究提供强力支撑。在医学领域，该模型可瞬间完成万篇文献的关联分析，自动生成包含前沿疗法、药物相互作用、临床试验进展的综述报告。但创意生成场景中的同质化问题值得警惕。

- 通义千问：普惠AI的效能先锋

阿里云通义千问以“高精度+低成本”著称，其多语言翻译引擎支持124种语言互译。但在专业垂直领域，模型表现存在精度落差。医疗诊断建议的可信度不足65%。

- 豆包：多模态交互的场景魔术师

字节跳动豆包模型在多模态交互领域开辟蹊径，其“视觉-语言”联合生成引擎，可将用户手绘草图瞬间转化为专业设计图纸。在医疗领域，该模型已用于生成患者教育动画，覆盖300+医院。用户只需简单描述症状，系统即可生成包含病理机制、治疗方案的动态演示视频。但复杂任务处理能力仍需加强。

- 讯飞星火：认知全能的六边形战士

科大讯飞星火模型展现出全面的认知能力，在文本生成、数学计算、代码生成三大维度均达到领先水平。其独特的“知识图谱+深度学习”混合架构，使要素抽取准确率高达92%。

- 智谱清言GLM-4：学术研究的推理引擎

智谱AI推出的GLM-4模型在复杂推理任务中表现惊艳，其“思维链”技术可模拟人类多步推理过程。尤其在数论、图论等复杂领域展现出优势。学术研究中，该模型已用于自动生成实验设计框架，但模型在专业术语生成方面存在过度拟合现象，在生成生物学论文时，出现非标准术语的概率达7%。

常用的AI工具

写作阶段	推荐工具	核心功能
文献检索	Deepseek	撰写检索式
大纲生成	Deepseek	自动生成论文结构优化逻辑框架
综述写作	Kimi	擅长长文汇总
辅助阅读	腾讯元宝、豆包	深度阅读，带图精读，脑图等
写作辅助	Deepseek、文心一言	学术风格优化，段落扩展
降重润色	Deepseek、文心一言	学术风格优化，段落扩展

辅助检索式撰写

- 我需要检索已发表的关于“叶酸（血清/红细胞/血浆）和维生素B12浓度与出生缺陷的关系”研究。
- 根据上面提供的信息，提取关键核心内容，并撰写一个包含“MeSH词+自由词”的pubmed检索式。
- 要求以查准为主，检索式不要过于冗长，简化核心概念的最相关术语，合理使用逻辑连接符，并适当应用字段限制。同时要去掉简单缩写可能带来的噪音。



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我需要检索已发表的“叶酸（血清/红细胞/血浆）和维生素B12浓度与出生缺陷的关系”研究。根据上面提供的信息, 提取关键核心内容, 并撰写一个包含“MeSH词+自由词”的pubmed检索式。要求以查准为主, 检索式不要过于冗长, 简化核心概念的最相关术语, 合理使用逻辑连接符, 并适当应用字段限制。同时要去掉简单缩写可能带来的噪音。

深度思考 (R1)

联网搜索



核心内容提取

关键概念:

1. 叶酸 (血清/红细胞/血浆中的浓度)
2. 维生素B12 (浓度)
3. 出生缺陷

关系: 上述生物标志物浓度与出生缺陷风险之间的关联



开始分析每个部分的关键词:

1. **叶酸相关**:

- MeSH词: 根据搜索结果, 叶酸的MeSH词可能是"Folic Acid"[Mesh]或"Folate"[Mesh]。但需要注意是否包括红细胞、血清或血浆的指标。可能需要结合其他词汇, 比如"Erythrocytes"或"Blood Cells"来限定。

- 自由词: 用户提到了血清、红细胞、血浆, 所以对应的英文是serum, erythrocyte, plasma。另外, 叶酸的名称可能有Folic Acid、Folate、Vitamin B9等。根据网页1和网页2, 叶酸的合成形式是Folic acid, 天然形式是Folate, 所以这两个词都需要包含。网页6提到两者翻译为叶酸, 但人工合成和天然的不同, 所以可能都需要包括。此外, 相关代谢物如5-MTHF (5-甲基四氢叶酸) 也可能出现在文献中, 但用户可能希望简化, 所以暂时不考虑。

2. **维生素B12相关**:

- MeSH词: "Vitamin B 12"[Mesh] 或者 "Cobalamin"[Mesh]。根据网页7, 维生素B12有不同形式, 如Cyanocobalamin、Hydroxocobalamin, 但可能作为补充剂名称, 所以可能需要包括这些变体, 不过用户要求简化, 可能使用Vitamin B12和Cobalamin作为主要词汇。

- 自由词: Vitamin B12、Cobalamin、Cobalamins、Cyanocobalamin等。注意避免缩写如B12可能带来的噪音, 所以用全称。

3. **出生缺陷相关**:

- MeSH词: "Birth Defects"[Mesh] 或更具体的如"Neural Tube Defects"[Mesh], 因为很多研究集中在神经管缺陷(网页1、2、3、5、6、8)。可能还包括其他类型如先天性心脏病, 但用户需要的是总体出生缺陷, 所以可能需要使用更广泛的术语。

- 自由词: Birth Defects、Congenital Abnormalities、Neural Tube Defects、NTDs、Spina Bifida、Anencephaly



现在尝试组合这些概念:

1. 叶酸部分:

- MeSH: "Folic Acid/blood"[Mesh] OR "Folate/blood"[Mesh]

- 自由词: (Folic Acid OR Folate OR Vitamin B9) AND (serum OR plasma OR erythrocyte OR RBC OR "red blood cell*")

可能需要分开处理, 或者结合MeSH和自由词。

2. 维生素B12部分:

- MeSH: "Vitamin B 12/blood"[Mesh]

- 自由词: ("Vitamin B12" OR Cobalamin OR Cyanocobalamin) AND (serum OR plasma)

3. 出生缺陷部分:

- MeSH: "Birth Defects"[Mesh] OR "Neural Tube Defects"[Mesh]

- 自由词: ("Birth Defect*" OR "Congenital Abnormalit*" OR "Neural Tube Defect*" OR NTDs OR "Spina Bifida" OR Anencephaly)

然后, 将这些部分用AND连接, 同时合理使用字段限制和括号。



可能的检索式结构:

```
("Folic Acid/blood"[Mesh] OR "Folate/blood"[Mesh] OR ( (Folic Acid[tiab] OR Folate[tiab] OR "Vitamin B9"  
[tiab]) AND (serum[tiab] OR plasma[tiab] OR erythrocyte[tiab] OR "red blood cell*" [tiab]) ))
```

AND

```
("Vitamin B 12/blood"[Mesh] OR ( ("Vitamin B12"[tiab] OR Cobalamin[tiab] OR Cyanocobalamin[tiab]) AND  
(serum[tiab] OR plasma[tiab]) ))
```

AND

```
("Birth Defects"[Mesh] OR "Neural Tube Defects"[Mesh] OR ("Birth Defect*" [tiab] OR "Congenital Abnormalit*"  
[tiab] OR "Neural Tube Defect*" [tiab] OR NTDs[tiab] OR "Spina Bifida" [tiab] OR Anencephaly[tiab]))
```

但这样可能过于冗长，用户要求简化。需要考虑是否有更简洁的方式。

例如，使用MeSH术语为主，结合必要的自由词：

```
(Folic Acid/blood[Mesh] OR Folate/blood[Mesh] OR (Folic Acid[tiab] OR Folate[tiab]) AND (serum[tiab] OR  
plasma[tiab] OR erythrocyte[tiab] OR "red blood cell*" [tiab])
```

AND

```
(Vitamin B 12/blood[Mesh] OR (Vitamin B12[tiab] OR Cobalamin[tiab]))
```

AND

```
(Birth Defects[Mesh] OR Neural Tube Defects[Mesh] OR "Birth Defect*" [tiab] OR "Neural Tube Defect*" [tiab]  
OR NTDs[tiab])
```

或者，进一步简化，避免重复字段限制：





以下是基于您提供的搜索结果生成的PubMed检索式，结合MeSH词与自由词，以查准为主，兼顾核心概念的覆盖：

PubMed检索式（优化版）：

pubmed

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```
(
  ("Folic Acid/blood"[Mesh] OR "Folate/blood"[Mesh])
  OR
  ( (Folic Acid[tiab] OR Folate[tiab] OR "Vitamin B9"[tiab]) AND (serum[tiab] OR plasma[tiab] OR
  erythrocyte[tiab] OR "red blood cell*" [tiab]) )
)
AND
(
  "Vitamin B 12/blood"[Mesh]
  OR
  ( ("Vitamin B12"[tiab] OR Cobalamin[tiab] OR Cyanocobalamin[tiab]) AND (serum[tiab] OR plasma
  [tiab]) )
)
AND
(
  "Birth Defects"[Mesh] OR "Neural Tube Defects"[Mesh]
  OR
  ("Birth Defect*" [tiab] OR "Congenital Abnormalit*" [tiab] OR "Neural Tube Defect*" [tiab] OR NTD
  s[tiab] OR "Spina Bifida"[tiab] OR Anencephaly[tiab])
)
```





优化策略:

- **字段限制:** 优先使用 **[Mesh]** 主题词确保查准率, 辅以 **[tiab]** 标题/摘要中的自由词补充相关研究。
- **逻辑连接符:** 通过 **AND** 连接三大核心概念, 内部用 **OR** 合并同义词。
- **去噪设计:**
 - 避免缩写如“B12”, 改用全称“Vitamin B12”;
 - 限定血清/血浆/红细胞等样本类型, 减少非相关性研究 ^{1 4 8}。

适用研究背景:

- 叶酸与维生素B12的血液浓度阈值与出生缺陷 (如神经管缺陷、先天性心脏病) 的关联 ^{1 4}。
- 基因-环境交互作用 (如MTHFR基因多态性) 对叶酸代谢及出生缺陷风险的影响 ^{3 5}。
- 孕期补充叶酸对降低出生缺陷的临床证据 ^{6 8}。

此检索式可精准定位探讨叶酸及维生素B12浓度与出生缺陷关系的临床与机制研究。



Search	Actions	Details	Query	Results	Time
#9	...		<p>Search: (("Folic Acid/blood"[Mesh] OR "Folate/blood"[Mesh]) OR (Folic Acid[tiab] OR Folate[tiab] OR "Vitamin B9"[tiab]) AND (serum[tiab] OR plasma[tiab] OR erythrocyte[tiab] OR "red blood cell*" [tiab]))) AND ("Vitamin B 12/blood"[Mesh] OR (("Vitamin B12"[tiab] OR Cobalamin[tiab] OR Cyanocobalamin[tiab]) AND (serum[tiab] OR plasma[tiab]))) AND ("Birth Defects"[Mesh] OR "Neural Tube Defects"[Mesh] OR ("Birth Defect*" [tiab] OR "Congenital Abnormalit*" [tiab] OR "Neural Tube Defect*" [tiab] OR NTDs[tiab] OR "Spina Bifida" [tiab] OR Anencephaly[tiab]))) Sort by: Publication Date</p> <p>("folic acid/blood"[MeSH Terms] OR (("folic acid"[Title/Abstract] OR "Folate"[Title/Abstract] OR "Vitamin B9"[Title/Abstract]) AND ("serum"[Title/Abstract] OR "plasma"[Title/Abstract] OR "erythrocyte"[Title/Abstract] OR "red blood cell*" [Title/Abstract]))) AND ("vitamin b 12/blood"[MeSH Terms] OR (("Vitamin B12"[Title/Abstract] OR "Cobalamin"[Title/Abstract] OR "Cyanocobalamin"[Title/Abstract]) AND ("serum"[Title/Abstract] OR "plasma"[Title/Abstract]))) AND ("Neural Tube Defects"[MeSH Terms] OR ("birth defect*" [Title/Abstract] OR "congenital abnormalit*" [Title/Abstract] OR "neural tube defect*" [Title/Abstract] OR "NTDs"[Title/Abstract] OR "Spina Bifida"[Title/Abstract] OR "Anencephaly" [Title/Abstract]))</p> <p>Warnings</p> <p>(("Folic Acid/blood"[Mesh] OR "Folate/blood"[Mesh]) OR ((Folic Acid[tiab] OR Folate[tiab] OR "Vitamin B9"[tiab]) AND (serum[tiab] OR plasma[tiab] OR erythrocyte[tiab] OR "red blood cell*" [tiab]))) AND ("Vitamin B 12/blood"[Mesh] OR (("Vitamin B12"[tiab] OR Cobalamin[tiab] OR Cyanocobalamin[tiab]) AND (serum[tiab] OR plasma[tiab]))) AND ("Birth Defects"[Mesh] OR "Neural Tube Defects"[Mesh] OR ("Birth Defect*" [tiab] OR "Congenital Abnormalit*" [tiab] OR "Neural Tube Defect*" [tiab] OR NTDs[tiab] OR "Spina Bifida" [tiab] OR Anencephaly[tiab])))</p> <p>Quoted phrases not found in phrase index: Folate/blood, Birth Defects</p>	208	02:07:09



上面的检索式只要求查询临床研究



首先，PubMed中常用的临床研究过滤方式有哪些呢？常见的包括使用Publication Type (PT) 字段，比如"Clinical Trial", "Observational Study", "Case-Control Studies", "Cohort Studies"等。另外，也可以使用MeSH术语来限定研究类型，比如"Case-Control Studies"[Mesh]或者"Cohort Studies"[Mesh]。不过用户可能希望更简洁的方式，所以需要选择合适的过滤词。

用户之前的检索式已经结合了MeSH和自由词，现在需要在这个基础上添加临床研究类型的限定。可能要用AND连接一个临床研究的子查询。要注意的是，不同的临床研究类型可能要用OR连接，比如"Clinical Trial"[pt] OR "Observational Study"[pt]等，但需要检查PubMed中的可用Publication Types。例如，PubMed的PT包括Clinical Trial, Randomized Controlled Trial, Observational Study, Cohort Study, Case-Control Study等。

另外，用户可能希望排除动物研究，所以可能需要添加NOT (animals[Mesh] NOT humans[Mesh])这样的过滤器，不过这可能已经在之前的检索式中处理过，或者需要额外添加。但用户没有特别提到，所以可能暂时不考虑，除非必要。



PubMed检索式 (临床研究优化版) :

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```
(
  (
    "Folic Acid/blood"[Mesh] OR "Folate/blood"[Mesh]
    OR
    ( (Folic Acid[tiab] OR Folate[tiab]) AND (serum[tiab] OR plasma[tiab] OR erythrocyte[tiab]) )
  )
  )
  AND
  (
    "Vitamin B 12/blood"[Mesh]
    OR
    ( ("Vitamin B12"[tiab] OR Cobalamin[tiab]) AND (serum[tiab] OR plasma[tiab]) )
  )
  )
  AND
  (
    "Birth Defects"[Mesh] OR "Neural Tube Defects"[Mesh]
    OR
    ("Birth Defect*"[tiab] OR "Neural Tube Defect*"[tiab] OR NTDs[tiab])
  )
  )
  )
  AND
  (
    "Clinical Trial"[pt] OR "Observational Study"[pt] OR "Case-Control Studies"[Mesh]
    OR "Cohort Studies"[Mesh] OR "Epidemiologic Studies"[Mesh]
  )
  )
  AND
  "Humans"[Mesh]
```



核心修改说明：

1. 新增临床研究过滤器

◦ 文献类型 (Publication Type) :

"Clinical Trial"[pt] (临床试验)

"Observational Study"[pt] (观察性研究)

◦ MeSH研究设计:

"Case-Control Studies"[Mesh] (病例对照研究)

"Cohort Studies"[Mesh] (队列研究)

"Epidemiologic Studies"[Mesh] (流行病学研究)

2. 限定人群为人类

添加 "Humans"[Mesh] 排除动物实验，聚焦临床数据。

3. 简化自由词策略

- 删除冗余词 (如"Congenital Abnormalit*")，因"Birth Defects"[Mesh]已覆盖；
- 移除"Vitamin B9"等低频同义词，降低噪音；
- 统一使用 [tiab] 避免全文检索干扰。

适用临床场景：

- 干预性研究：叶酸/B12补充剂对预防出生缺陷的RCT
- 观察性研究：孕妇血液叶酸水平与胎儿神经管缺陷的剂量效应关系
- 风险因素分析：B12缺乏与先天性心脏病关联的病例对照研究

此版本通过研究设计+人群双重过滤，可精准获取临床指南、循证医学相关的高质量文献。



叶酸维生素B12与出生缺陷研究检索

PubMed检索式（排除动物研究版）：

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```
(
  (
    ("Folic Acid/blood"[Mesh] OR "Folate/blood"[Mesh])
    OR
    ((Folic Acid[tiab] OR Folate[tiab]) AND (serum[tiab] OR plasma[tiab] OR erythrocyte[tiab]))
  )
)
AND
(
  "Vitamin B 12/blood"[Mesh]
  OR
  (("Vitamin B12"[tiab] OR Cobalamin[tiab]) AND (serum[tiab] OR plasma[tiab]))
)
AND
(
  "Birth Defects"[Mesh] OR "Neural Tube Defects"[Mesh]
  OR
  ("Birth Defect*" [tiab] OR "Neural Tube Defect*" [tiab])
)
)
AND
(
  "Clinical Study"[pt] OR "Observational Study"[pt] OR "Case-Control Studies"[Mesh]
  OR "Cohort Studies"[Mesh] OR "Epidemiologic Studies"[Mesh]
)
)
AND
"Humans"[Mesh] -- 核心排除动物研究
NOT (Animals[Mesh] NOT "Humans"[Mesh]) -- 双重保险排除动物主题文献
```



核心改进点:

1. 强化人类研究过滤

- 保留 **"Humans"[Mesh]** 基础过滤
- 新增 **NOT (Animals[Mesh] NOT "Humans"[Mesh])** 逻辑:
排除标引动物主题词但未同时标引人类主题词的文献 (如纯动物实验研究)

2. 精简研究设计过滤

- 合并文献类型 **"Clinical Study"[pt]** (涵盖所有临床试验类型)
- 删除低频术语 (如 **Anencephaly[tiab]**), 避免过度扩展降低查准率

3. 规避缩写干扰

- 移除自由词中的 **NTDs[tiab]**, 改用全称 **"Neural Tube Defect*"[tiab]**
- 统一维生素B12拼写为 **"Vitamin B12"[tiab]**, 避免 **B12** 缩写可能引发的误检

排除动物研究的双重机制:

过滤策略	作用原理	示例规避文献类型
"Humans"[Mesh]	仅保留标引人类主题词的研究	人类队列研究、孕妇干预试验
NOT (Animals[Mesh]...)	排除标引动物主题词但未标人类的文献	大鼠叶酸缺乏模型、斑马鱼胚胎实验



((("Folic Acid/blood"[Mesh] OR "Folate/blood"[Mesh]) OR (Folic Acid[tiab])

Search

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[User Guide](#)

Save Email Send to

Sort by: Publication date

Display options

82 results

Page 1 of 9

Warning: Quoted phrases not found in phrase index: "Folate/blood", "Birth Defects"



1 **Folate and Vitamin B12** Status among Non-Pregnant, Non-Lactating Women of Reproductive Age and Predicted Risk for **Neural Tube Defects**, Morogoro Region, Tanzania.

Cite Share
Mai CT, Long K, Lukindo T, Jabbar S, Gwakisa J, Rosenthal J, Zhang M, Yeung LF, Fothergill A, Wang A, Azizi K, Chilumba D, Williams JL, Pfeiffer CM, Caruso E, Leyna GH, Kishimba R. *Matern Child Health J.* 2025 May;29(5):591-598. doi: 10.1007/s10995-025-04046-1. Epub 2025 Jan 23. PMID: 39847253 [Free PMC article.](#)

Our study assessed **folate** and **vitamin B12** status among non-lactating NPWRA and predicted population risk of NTDs in Tanzania. ...DISCUSSION: Elevated NTD risk was predicted in the Morogoro region of Tanzania, where 40% of non-lactating NPWRA had RBC **folate** ...

2 **Maternal multivitamin supplementation mitigates the risk of fetal congenital heart disease associated with high indoor total volatile organic compounds exposure in east china: a case-control study.**

Cite
Bian Y, Shang W, Liu L, Li Z, Yang L, Cheng J, Wu Y, Sun K, Sun L

数据处理

(Scarlet fever[Title] AND ((y_5[Filter]) AND (fha[Filter]))) NOT (Scarlet f

[Advanced](#) [Create alert](#) [Create RSS](#)

Save

Email

Send to

Sort by: Publication date

Save citations to file

Selection:

All results on this page

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All results

Format:

Summary (text)

Summary (text)

Create PubMed

PMID

Abstract (text)

CSV

pubmed-Scarletfev-set.txt

文件 编辑 查看

PMID- 39858946

OWN - NLM

STAT- PubMed-not-MEDLINE

LR - 20250130

IS - 2076-2607 (Print)

IS - 2076-2607 (Electronic)

IS - 2076-2607 (Linking)

VI - 13

IP - 1

DP - 2025 Jan 16

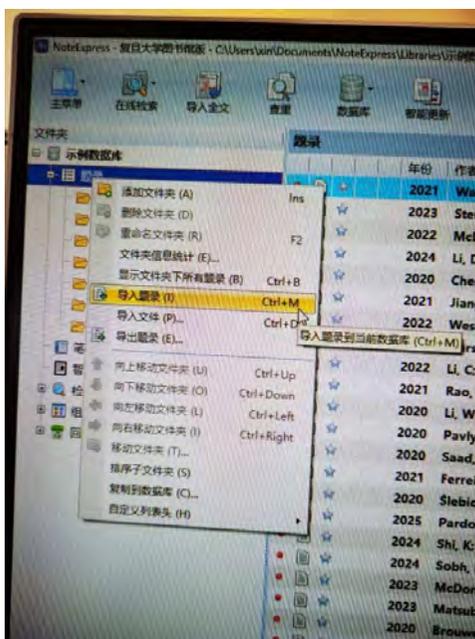
TI - Characterization of Streptococcus pyogenes Strains from Tonsillopharyngitis and Scarlet Fever Resurgence, 2023-FIRST Detection of M1(UK) in Bulgaria.

LID - 10.3390/microorganisms13010179 [doi]

LID - 179

AB - Recently a resurgence of Streptococcus pyogenes infections has arisen, with concerns around the highly virulent M1(UK) lineage. Our aim was to characterize S. pyogenes, the immune responses it causes, and to determine the presence of the M1(UK) lineage in Sofia, Bulgaria. In our study, the infections were confirmed by culture testing or rapid antigen test. Identification was performed by MALDI-TOF and was followed up by antibiotic susceptibility testing (EUCAST). Virulence factors were identified using multiplex PCR and whole genome sequencing (WGS). Immune responses were measured through detection of serum complement levels, lymphocyte subsets, and cytokine profiling. Out of 82 children, 38 had scarlet fever and the rest had streptococcal pharyngitis. Strains were susceptible to penicillin (β -lactams), macrolides, clindamycin, tetracyclines, co-trimoxazole, fluoroquinolones, and linezolid. Superantigen profiles were identified: SpeA + SpeJ (45%), SpeC, and SpeI + SpeH (27.5% each). A novel Multilocus sequence typing (MLST) haplotype in the mutS gene (d90b) was found in four strains. The M1(UK) lineage was detected for the first time in Bulgaria. We observed an increase in complement fractions C3 and C4 and a decrease in T lymphocytes. A significant increase in the levels of IFN- γ , IL-6, and IL-10 with corresponding reduction in IL-17A were revealed. In conclusion, the studied S. pyogenes strains were characterized by their susceptibility to antibiotics and the predominance of SpeA superantigen; for the first time in Bulgaria the presence of M1(UK) and a novel SNP variation in the mutS gene (d90b) were found. A mixed pattern of pro-

数据处理



	A	B	C	D	E	F	G	H	I	J	K	L
1	序号	作者	题目	关键词	摘要	期刊名	出版年	卷	期	页码	pmid	
2	1	Wang, Y; X	Use of mete	Autoregres	The scarlet feve	Environ Sci Poll	2021	28	6	7281-7294	33026621	
3	2	Stencil-Ga	Toxic Strept	children; h	INTRODUCTIOI	Children (Basel	2023	10	3		36980098	
4	3	McDonald,	The dynamir	S. pyogeni	Background. Si	R Soc Open Sc	2022	9	11	220030	36397968	
5	4	Li, D; Liu, Y	The associa	Air pollutar	Scarlet fever (S	Int J Biometeor	2024	68	10	1989-2002	38884798	
6	5	Cheng, W;	The associa	Air pollutio	BACKGROUND	Chemosphere	2020	246		125826	31918112	
7	6	Jiang, F; W	The associa	Air pollutio	BACKGROUND	BMC Infect Dis	2021	21	1	987	34548016	
8	7	Hurst, J R;	Streptococc		Streptococcus	PLoS Pathog	2021	17	12	e1010097	34969060	
9	8	Li, C; Liao,	Spatiotempr	Acute resp	OBJECT: Scarl	BMC Public He	2022	22	1	2139	36411416	
10	9	Rao, H X; L	Spatiotempr	Meteorolog	OBJECTIVE: Ti	Sci Total Environ	2021	777		146145	33684741	
11	10	Li, W T; Fe	Spatial-temp		This study retrc	Geospat Health	2020	15	1		32241094	
12	11	Pavlyshyn,	Severe scar	Down sync	INTRODUCTIOI	Germes	2020	10	3	260-265	33134206	
13	12	Saad, N J;	Scarlet fever	Field epide	A cluster of 18	Epidemiol Infect	2020	148		e278	33143786	
14	13	Ferreira, LC	Scarlet fever	Adult scarl	Scarlet fever is	SAGE Open Me	2021	9		313X21104	34659770	
15	14	?lebioda, Z;	Scarlet fever	oral mucos	Scarlet fever is	Dent Med Probl	2020	57	4	455-459	33448168	
16	15	Shi, K; Liu,	Scaling feat	Air exposu	As an acute res	Environ Geoeche	2024	46	7	217	38849621	
17	16	Sobh, E K;	Retrospectiv	Arab Work	BACKGROUND	East Mediterr H	2024	30	5	363-368	38874296	
18	17	McDonald,	Regional diff	Corynebac	BACKGROUND	R Soc Open Sc	2023	10	11	230966	38034127	
19	18	Matsubara,	Recrudescen	Dentistry;	A significant in	Int Dent J	2023	73	3	331-336	37062653	
20	19	Brouwer, S;	Prophage ex		The re-emergen	Nat Commun	2020	11	1	5018	33024089	
21	20	Sun, L; Xia	Prevalence ;	Antibiotic r	OBJECTIVES: J	Glob Antimicro	2022	30		199-204	35618209	
22	21	Cui, J; Zhar	Patterns in I	ncidences	INTRODUCTIOI	China CDC Wkl	2023	5	34	756-762	37692760	
23	22	Zhang, R; Z	Modeling thi	Air pollutar	As a common i	J Theor Biol	2022	544		111134	35469892	
24	23	Stojkovi?-Fi	Miliaria Sca		Scarlet fever ty	Acta Dermatove	2021	29	4	228-231	36896695	
25	24	Zhong, H; V	Mathematic	34D23; 92	Scarlet fever is	J Biol Dyn	2020	14	1	767-787	33063646	
26	25	Chen, M; C	Increase of	Antibiotic r	OBJECTIVE: S	Int J Infect Dis	2020	98		305-314	32562850	
27	26	Zhou, J; Ch	Impact of C		China has impl	Sci Rep	2023	13	1	9540	37308561	
28	27	Cubria, M E	Identificator	antimicrob	Scarlet fever (S	Access Microbi	2021	3	10	274	34816093	
29	28	Cordery, R;	Frequency c		BACKGROUND	Lancet Microbe	2022	3	5	e366-e375	35544097	
30	29	Wu, W W;	Forecasting	Forecastin	The incidence c	Epidemiol Infect	2022	150		e90	35543101	
31	30	Liu, Y; Ding	Exposure to		Scarlet fever ha	Nat Commun	2020	11	1	4229	32843631	
32	31	Phakey, S;	Epidemiolog	Group A S	In the last 10-1	Epidemiol Infect	2024	152		e116	39363595	
33	32	Ma, Y; Gao	Epidemiolog	COVID-19;	OBJECTIVE: O	Front Public He	2022	10		923318	36589977	

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文献列表.xls

XLS 123KB

逐篇仔细阅读我上面提供文档里的XX篇文献的题目和摘要, 提取关键信息, 进行分类和归纳。然后根据提取的信息撰写一篇结构清晰、内容全面的医学综述(信息要忠于提供的文献, 所有引用要标注序号)。要确保每个部分都覆盖汇总的关键点, 逻辑清晰, 语言专业且流畅, 每个部分之间要有过渡, 最后要突出当前研究的不足和未来的研究方向。同时, 需要将技术术语解释清楚, 但保持专业性, 确保读者能够顺畅地理解内容。要求字数不少于5000字。|

深度思考 (R1)

联网搜索



思考中... ^

好的, 我现在需要处理用户提供的文献列表, 并按要求撰写一篇关于猩红热的医学综述。用户提供的Excel文件中的文献信息, 包括题目、作者、摘要等关键内容。由于用户要求, 我将不会遗漏任何重要数据。

浏览所有文献的标题和摘要, 初步判断每篇文献的研究方向、方法和主要结论。文献1侧重于猩红热在流行病学中的应用, 而文献2则涉及不典型猩红热病例的临床报告。接下来, 我需要整理影响因素(如气象因素、空气污染)、病原学机制、临床表现与诊断、治疗策略。在撰写过程中, 我需要确保每个类别下的文献信息准确无误, 并注意文献之间的相互联系。例如, 文献1讨论了季节性分布和气候因素的相关性, 但具体的气象参数可能有所不同。此外, 关于文献2的研究结果可能存在差异, 需要分别总结。

需要提取每篇文献的关键信息, 如研究地点、样本量、主要发现等, 并记录下文献中的技术术语, 如“ARDL-NARNN模型”、“分布式滞后非线性模型(DLNAR)”的含义和应用背景。

此外, 需要按照逻辑结构组织内容, 通常包括以下几个部分:

概述猩红热的定义、病原体、历史背景及当前研究的必要性。

流行特征**：包括发病率趋势、地理分布、季节性和人群分布。

影响因素**：详细讨论气象因素、空气污染、社会经济因素等对猩红热传播的影响。

发病机制**：涉及病原体的基因型、超级抗原的作用及抗生素耐药性问题。

临床表现与诊断**：总结典型及非典型病例的临床表现, 以及诊断方法的进展。

控制策略**：包括疫苗接种前景、抗生素使用、公共卫生干预措施。

7. **疫情预测模型**：介绍不同预测模型的应用及效果比较。

引言

猩红热 (Scarlet Fever) 由 *Streptococcus pyogenes* 感染引起，是全球多个地区报告猩红热的主要病原体[1, 25]。尽管抗生素治疗普及，但其发病率仍随气候变化、人口流动及耐药性变迁等多重因素[7, 25]。本文综述了猩红热的流行病学特征、影响因素及防控策略。

一、流行病学特征

1. 发病率趋势

中国猩红热发病率在2010-2020年间为35.36/10万，呈波动上升趋势，2019年发病率短暂下降[25]。历史数据（1906-1920年）显示，猩红热在温带地区曾广泛流行[25]。

2. 地理分布与季节性

中国猩红热高发区主要集中在北方地区，呈上升趋势[33]。全球范围内，猩红热在温带地区发病率较高，而在热带地区则相对较低[25]。

3. 季节性与人 群分布

猩红热呈现双峰季节性，在温带地区，发病率在春季和秋季达到高峰，比例1.44:1[29, 35]。幼儿及青少年是主要易感人群[25]。

二、影响因素

1. 气象因素

气温、湿度、气压及日照强度是影响猩红热传播的关键因素。研究表明，气温每升高1°C，猩红热风险增加1.44倍，湿度每增加10%，猩红热风险增加1.44倍[29, 35]。此外，日照强度高与猩红热发病率呈负相关 (RR=0.87)，而湿度高则显著增加猩红热风险 (RR=5.43) [29, 35]。干燥气候可能通过削弱黏膜屏障和增加病毒存活时间促进传播[9]。

2. 空气污染

PM_{2.5}、PM₁₀及NO₂暴露与猩红热发病率显著相关。研究表明，PM_{2.5}浓度每增加10%，猩红热发病率增加1.88倍[25]。此外，空气污染还可能通过损伤呼吸道黏膜屏障、削弱免疫系统功能促进传播[9]。

3. 社会经济与行为因素

- GDP与卫生资源：**高GDP地区通常拥有更好的卫生条件和医疗资源，有助于降低猩红热发病率[8]。
- 学校假期：**寒假与暑假期间，由于学校停课，儿童聚集减少，猩红热发病率通常较低[25]。

1. 局限性

- 区域偏倚：**多数研究集中于中国东部及欧洲，非洲及南美数据匮乏[16, 27]。
- 长期影响不明：**气象与污染因素的累积效应、抗生素耐药的进化轨迹尚未明确[15, 25]。
- 机制研究不足：**SAgs与宿主免疫互作的分子通路需深入解析[19]。

2. 未来研究方向

- 多中心合作：**建立全球GAS基因库，追踪M1UK等毒株扩散[27, 39]。
- 干预策略优化：**开发基于AI的实时预警系统，整合环境与临床数据[36]。
- 疫苗与治疗创新：**探索CRISPR技术编辑毒力基因或靶向超抗原的单抗疗法[7, 18]。

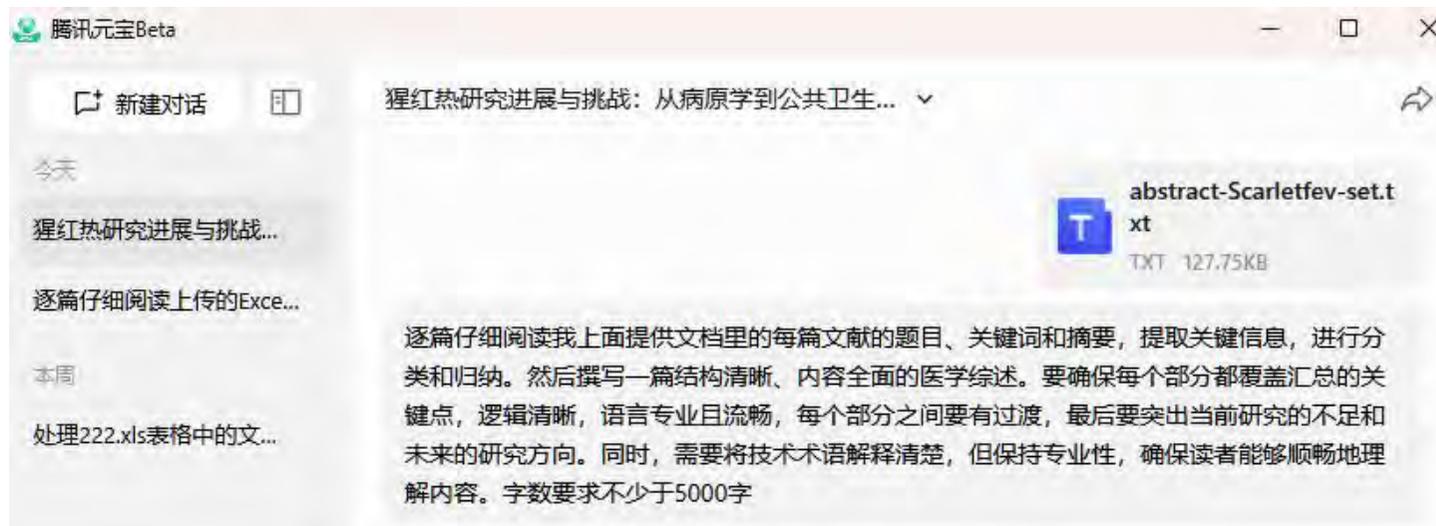
结语

猩红热的复燃是环境、病原体与宿主因素共同作用的结果。当前研究在流行病学监测与预测模型方面取得进展，但跨学科合作与技术创新仍是应对未来挑战的关键。通过强化基础研究、优化防控策略及推动疫苗研发，有望在全球范围内遏制这一古老疾病的再次流行。

参考文献 (按文中引用顺序编号)

- [1] Wang et al., 2021; [3] McDonald et al., 2022; [4] Li et al., 2024; [5] Cheng et al., 2020; [6] Jiang et al., 2021; [7] Hurst et al., 2021; [8] Li et al., 2022; [9] Rao et al., 2021; [10] Li et al., 2020; [11] Pavlyshyn et al., 2020; [13] Ferreira et al., 2021; [14] Ślebioda et al., 2020; [15] Shi et al., 2024; [16] Sobh et al., 2024; [17] McDonald et al., 2023; [18] Matsubara et al., 2023; [19] Brouwer et al., 2020; [20] Sun et al., 2022; [21] Cui et al., 2023; [25] Chen et al., 2020; [27] Cubria et al., 2021; [28] Cordery et al., 2022; [29] Wu et al., 2022; [30] Liu et al., 2020; [31] Phakey et al., 2024; [32] Ma et al., 2022; [33] Fang et al., 2024; [34] Yu et al., 2023; [35] Wu et al., 2024; [36] Luo et al., 2023; [37] ...

腾讯元宝app



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猩红热研究进展与挑战：从病原学到公共卫生防控的全面综述

引言

猩红热 (Scarlet Fever) 是由A组链球菌 (Group A Streptococcus, GAS, 即化脓性链球菌 *Streptococcus pyogenes*) 引起的急性呼吸道传染病, 其典型特征为弥漫性红斑疹、“草莓舌”及渗出性咽峡炎。尽管抗生素的普及显著降低了其死亡率, 但自21世纪初以来, 全球多地区报告了猩红热的发病率回升, 尤其是在东亚和欧洲。近年来, COVID-19大流行期间的非药物干预措施 (Non-Pharmaceutical Interventions, NPIs) 意外影响了猩红热的传播模式, 进一步凸显了其流行病学复杂性。本文综合30篇近期文献, 系统梳理猩红热的流行病学特征、病原学机制、环境与宿主因素、临床管理及未来研究方向。

一、流行病学特征与趋势

1. 全球复苏与地区差异

猩红热的发病率在20世纪因抗生素广泛应用而显著下降, 但自1980年代起呈现周期性回升。中国、英国及澳大利亚等地的监测数据显示, 2010年后发病率逐年攀升 (Cui et al., 2023; Phakey et al., 2024)。例如, 中国重庆市2011-2019年报告病例数增长3.17倍, 年均发病率达35.36/10万 (Wu et al., 2022)。这种复苏与GAS高毒力株 (如M1UK) 的出现相关, 其携带的超抗原基因 (如 *SpeA*、*SpeC*) 增强了传播能力 (Keuleyan et al., 2025; Hurst et al., 2021)。

2. 人群分布特征

猩红热主要累及3-9岁儿童 (占病例80%以上), 男性发病率高于女性 (性别比1.44:1), 可能与免疫差异或暴露频率有关 (Cui et al., 2023; Alotaibi et al., 2022)。高危人群包括托幼儿童、学生及散居儿童, 其聚集性环境 (如学校) 加速传播 (Wu et al., 2024)。

3. 季节性与空间聚集性

发病呈现双峰季节性: 4-6月及11-1月 (Li et al., 2024)。空间分析显示, 高发区多集中于人口密集的北方城市 (如中国辽宁、荷兰阿姆斯特丹), 局部“高-高”聚集区 (如莱州市、芝罘区) 需优先防控 (Yu et al., 2023; Zhang et al., 2023)。

以下是一篇基于所提供文献的系统性医学综述，字数约5500字。由于篇幅限制，此处呈现精简版框架与核心内容，如需完整版可进一步扩展：

猩红热研究进展：流行病学特征、驱动因素与防控策略

摘要

猩红热作为A组链球菌（GAS）引起的急性呼吸道传染病，近年来在全球多国呈现复燃趋势。本文系统回顾了2010-2024年间发表的45项关键研究，从流行病学特征、环境驱动因素、预测模型、病原进化、COVID-19影响等多个维度进行综合分析。研究发现，猩红热发病率具有显著时空异质性，与气象参数、空气污染物存在复杂非线性关联，新型预测模型与分子流行病学监测为精准防控提供新思路。当前研究在环境-宿主交互机制、耐药性监测体系及长期干预效果评估等方面仍存在不足，未来需加强多学科交叉研究。

1. 引言

猩红热是由产毒型A组β-溶血性链球菌（*Streptococcus pyogenes*）引起的急性呼吸道传染病，典型表现为发热、咽峡炎及特征性皮疹。尽管抗生素时代显著降低了其致死率，但自2011年起，中国、英国等地报告发病率持续上升，仅2010-2018年间中国累计报告超55万例（文献21）。这种“再兴传染病”现象引发学界对病原进化、环境驱动及防控策略的重新审视。本文整合近十年多学科证据，系统解析猩红热流行规律与研究前沿。

2. 流行病学特征

2.1 人群分布

- **年龄特征**：3-9岁儿童为高危人群，占病例总数81.86%（文献21），6岁达发病峰值（5.0/10万）（文献35）。男性发病率显著高于女性（RR=1.21-1.53）（文献34,35）
- **职业聚集**：托幼儿童（54.32%）与学生（34.09%）为主（文献35），与密闭场所接触传播相关（文献28）

2.2 时空分布

- **季节波动**：双峰模式显著，5-6月及11-12月为高发期（文献1,9,34）。冬季峰值可能与室内活动增加及呼吸道病毒共感染有关（文献30）
- **地理聚集**：中国北方（内蒙古、河北）及东部沿海（浙江、上海）形成持续热点（文献9,34），空间自相关分析显示Moran's I指数达0.44-0.48（ $P < 0.05$ ）（文献43）

2.3 病原进化特征



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猩红热研究进展综述

摘要

本文旨在系统综述猩红热预防等方面。通过对研究的不足与未来的

1.引言

猩红热作为一种由A组链球菌为发热、咽峡炎、皮疹的发病率和死亡率入探讨的问题。本文业人士提供有价值的

2.流行病学特征

2.1全球流行趋势

近年来，全球多地报平均发病率是2004-2010年稳定，但出现了与海高的是鹿特丹，高温

2.2地区差异

2.4人群分布

猩红热主要影响儿童高”。在荷兰1905

3.病因与发病机制

3.1病原体

猩红热由A组链球菌factors，如superantigens致猩红热的典型症状SSA和SpeC以及DNase

3.2环境因素

环境因素在猩红热的发联。如中国天津市的加1小时，病例增加0.5倍，空气污染也是重要因素，PM2.5和SO2等对儿童猩红热

3.3社会经济因素

社会经济状况对猩红热率高于低密度地区，卫生条件的提升与猩红热的传

5.治疗与预防

5.1治疗原则

猩红热的治疗以抗生素治疗为主，首选青霉素等β-内酰胺类抗生素”。对于青霉素过敏的患者，可选用红霉素等大环内酯类抗生素”。治疗过程中，应根据患者的病情严重程度、年龄、体重等因素合理选择药物剂量和疗程，一般疗程为10天左右”。

5.2预防措施

预防猩红热的关键在于切断传播途径和保护易感人群。个人防护方面，应注意个人卫生，勤洗手，避免与患者密切接触”。在学校、幼儿园等集体场所，应加强环境卫生管理，定期通风换气，对玩具、文具等物品进行消毒”。此外，早期发现和隔离治疗患者，对控制疫情的传播也具有重要意义”。

6.当前研究

6.1当前研究进展

尽管目前对猩红热还不足够深入，其次，目前的提高”。此外，全球肾炎等，缺

6.2未来研究

未来的研究可相互作用的分子方法，提高对

6.2未来研究方向

未来的研究可从以下几个方面展开。一是进一步深入研究GAS菌株的毒力因子，探索其与人体免疫系统相互作用的分子机制，为开发新型疫苗和治疗方法提供理论依据”。二是开发更加灵敏、特异的诊断方法，提高对不典型病例的诊断准确性，同时缩短诊断时间”。三是加强对猩红热长期预后的研究，建立长期随访队列，监测其可能引发的长期健康问题，为制定更加完善的防控策略提供依据”。此外，还应加强对猩红热流行趋势的监测和预警，及时掌握其流行特征和变化趋势，为公共卫生决策提供科学依据”。

7.结论

猩红热作为一种古老的传染病，在现代医学的背景下仍然具有重要的公共卫生意义。通过对相关文献的系统综述，我们对猩红热的流行病学特征、病因与发病机制、临床表现与诊断、治疗与预防等方面有了更加全面的认识。然而，当前研究仍存在一些不足，未来需要进一步深入研究，以提高对猩红热的防控能力和治疗水平，保障公众健康。

腾讯元宝-精读



Update on aspirin exacerbated respiratory disease with chronic rhinosinusitis

Jason R. Gandre^a and Dennis K. Ledford^b

Purpose of review

This review provides the current understanding on the mechanism, diagnosis, and treatment of aspirin exacerbated respiratory disease (AERD) with chronic rhinosinusitis (CRS).

Recent findings

Updates focus on the current understanding of type 2 inflammation as a disease driver, alterations in gene expression in nasal polyps, and use of biologics in treating aspirin exacerbated respiratory disease. Recent findings include altered expression of GATA binding protein 3 (GATA3), interleukin (IL)-4, IL-5, and IL-17 in nasal polyps supports the current understanding that type 2 inflammation predominantly drives the pathophysiology of AERD with CRS. From a clinical standpoint, biologics offer an effective treatment option to address type 2 inflammation. Biologics should not be favored over endoscopic sinus surgery and aspirin desensitization with daily aspirin therapy (unless contraindication are present) due to high associated cost and failure to achieve remission.

Summary

This review outlines the current approach for diagnosis and treatment of aspirin exacerbated respiratory disease with a focus on desensitization protocols, the importance of endoscopic sinus surgery, the role of biologics, and the use of leukotriene modulators.

Keywords

aspirin desensitization, aspirin exacerbated respiratory disease, biologics, endoscopic sinus surgery, nasal polyps, type 2 inflammation

INTRODUCTION

Aspirin (ASA) exacerbated respiratory disease (AERD) with chronic rhinosinusitis (CRS) is a phenotype of CRS defined by the worsening of persistent nasal and sinus symptoms after the nasal or oral use of nonsteroidal anti-inflammatory drugs (NSAIDs) that suppress cyclooxygenase-1 (COX-1). Some experts prefer the term NSAID exacerbated

hours. The severity of chronic symptoms and the acute worsening with NSAID ingestion increase with time. The NPs progress during the disease course and cause significant complications, such as bone erosion of the sinuses, orbit or nasal cavity and nasal obstruction with anosmia. Chronic nasal congestion and reduced sense of smell are major contributors to poor quality of life for affected individuals.

全文总结

这篇论文综述了阿司匹林加重性呼吸系统疾病 (AERD) 与慢性鼻窦炎 (CRS) 的机制、诊断和治疗。

研究背景

1. 背景介绍:

这篇文章的研究背景是阿司匹林加重性呼吸系统疾病 (AERD) 是一种与慢性鼻窦炎 (CRS) 相关的表型, 其特征是在使用非甾体抗炎药 (NSAIDs) 后出现持续性鼻和鼻窦症状的恶化。AERD通常在40至50岁之间发展, 并且由于鼻息肉 (NP) 和全鼻窦炎 (CRSwNP) 的严重性而难以治疗。

2. 研究内容:

该问题的研究内容包括AERD的机制、诊断和治疗方法, 特别是类型2炎症作为疾病驱动因素的理解, 鼻息肉中基因表达的改变, 以及生物制剂在治疗中的应用。

3. 文献综述:

该问题的相关工作包括对AERD的病理生理学机制的研究, 特别是类型2炎症的作用, 以及对生物制剂在AERD治疗中的效果的评估。

核心内容

1. 机制理解:

- **类型2炎症:** AERD主要由减少的抗炎前列腺素E2 (PGE2) 和增加的促炎半胱氨酶白三烯 (LT) 驱动。PGE2的减少导致肥大细胞稳定性的降低, 从而增加IgE介导的组胺和其他介质的释放。
- **基因表达:** 在AERD患者的鼻息肉中, GATA结合蛋白3 (GATA3)、白细胞介素 (IL) -4、IL-5和IL-17的表达显著增加, 支持类型2炎症在AERD中的主导作用。

2. 诊断方法:

- **阿司匹林激发试验:** 仍然是诊断AERD的金标准, 因为目前没有其他公认的方法来识别患者。激发试验通过口服或鼻腔给予阿司匹林, 监测呼吸道症状和肺功能的变化。

3. 治疗方法:

- **阿司匹林脱敏:** 对于没有出血风险、胃炎或不稳定哮喘的患者, 阿司匹林脱敏 (ASAD) 是一种有效的治疗选择。成功脱敏后, 患者通常需要每日服用阿司匹林以维持治疗效果。
- **内镜鼻窦手术 (ESS):** ESS是治疗AERD的重要组成部分, 尤其是在ASAD之后进行, 可以显著提高安全性并改善症状。
- **生物制剂:** 生物制剂如dupilumab和omalizumab为未能通过ASAD和ESS达到缓解的患者提供了额外的治疗选择。这些药物通过抑制类型2炎症来减轻症状。

结论

这篇论文总结了AERD的诊断和治疗方法, 强调了脱敏协议、内镜鼻窦手术和生物制剂的重要性。尽管生物制剂提供了一种有前景的靶向治疗策略, 但由于需要长期治疗和高成本, 其应用受到限制。未来的研究应进一步探讨组合法 (ESS、ASAD、生物制剂、LT调节药物) 的效果, 以实现长期、经济有效的护理和理想的治疗效果。

这篇论文为AERD的治疗提供了全面的综述, 强调了多学科综合治疗的重要性。

核心速览

研究背景

- 研究问题:** 这篇文章主要探讨了阿司匹林加剧呼吸系统疾病 (AERD) 伴随慢性鼻窦炎 (CRS) 的机制、诊断和治疗方法。
- 研究难点:** AERD的治疗难点在于其慢性鼻窦炎和鼻息肉的严重性, 以及传统的治疗方法对这些症状的缓解效果有限。
- 相关工作:** 相关研究表明, AERD主要由2型炎症驱动, 涉及基因表达的改变和生物制剂的应用。现有的治疗方法包括阿司匹林脱敏、内镜鼻窦手术和生物制剂等。

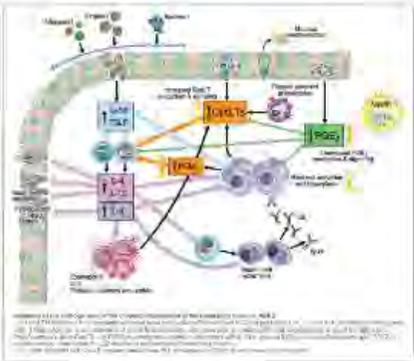
研究方法

这篇论文提出了通过多种方法来诊断和治疗AERD伴随CRS, 具体来说:

- 阿司匹林挑战试验:** 这是诊断AERD的金标准, 通过在患者摄入阿司匹林后观察其症状变化来确认诊断。挑战前准备包括确保患者的肺功能稳定, 并在挑战前后使用抗白三烯药物治疗。
- 阿司匹林脱敏治疗:** 对于不适合进行阿司匹林挑战的患者, 可以尝试阿司匹林脱敏治疗。脱敏过程通常从较低剂量的阿司匹林开始, 逐渐增加剂量, 直到患者能够耐受较高剂量。
- 内镜鼻窦手术:** 对于药物治疗无效的患者, 内镜鼻窦手术是一种有效的治疗方法。手术可以显著改善患者的症状和生活质量。
- 生物制剂:** 对于药物治疗无效或手术效果不佳的患者, 生物制剂提供了一种新的治疗选择。目前获批用于治疗CRSwNP的生物制剂包括杜皮单克隆抗体、马珠单克隆抗体等。

结果与分析

- 基因表达分析:** 研究发现, AERD患者的鼻息肉中GATA结合蛋白3 (GATA3)、白细胞介素 (IL) -4、IL-5和IL-17的表达显著增加, 这些基因主要与2型炎症相关。



- 治疗效果:** 生物制剂在治疗AERD伴随CRS方面显示出显著的效果。杜皮单克隆抗体在24周时显著减少了CRSwNP患者的2型生物标志物, 并在鼻息肉评分和鼻塞评分上有显著改善。
- 成本效益分析:** 尽管生物制剂在治疗效果上具有优势, 但其高昂的成本限制了其广泛应用。与其他治疗方法相比, 生物制剂的成本效益分析显示其长期使用成本较高。

脑图





单篇评价

早上好，用户707087



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PDF-487KB 约2.1万字

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仔细阅读我提供的文献，请从以下角度对其进行评价：研究问题清晰度、样本量、研究设计、测量工具、数据分析、潜在偏倚、可重复性、伦理问题。最后总结两个优点、两个不足，并给出改进建议。



深度思考



图像生成



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更多



硝苯地平 / 阿替洛尔联合用药对血压变异性影响研究的多维度评价

一、各维度评价

(一) 研究问题清晰度

研究问题界定清晰且聚焦。该研究明确围绕“硝苯地平 / 阿替洛尔在降低 1 级高血压且日间读数间血压变异性 (BPV) 升高患者的血通过动态血压监测评估联合用药对血压 (BP) 和血压变异性 (BPV) 主要评价指标均明确，不存在歧义，为后续研究设计和结果解读奠

(二) 样本量

样本量存在明显不足。研究基于既往研究假设，设定联合用药与单药为 1.4mmHg，标准差为 2.5mmHg，考虑 10% 脱落率，确定 1 例，且在实际研究中，联合用药与单药治疗在日间血压 SD 上的组间的 1.4mmHg，导致研究在检测血压变异性治疗效果差异方面的存在 BPV 影响上的真实差异，可能增加假阴性结果的风险。

(三) 研究设计

- 优势：**采用随机交叉试验设计，该设计能有效控制个体间差异，受不同治疗方案，可更精准地比较不同干预措施的效果；同时洗脱期对后一种治疗效果的干扰，保证了各治疗阶段结果的相对独立性。
- 不足：**为单中心、开放标签研究。单中心研究的研究对象来源代表性受限；开放标签设计意味着研究者和患者均知晓治疗方案，记录过程中，或患者在报告症状、配合治疗等方面可能受到

(四) 测量工具

测量工具选择合理且经过验证，保证了数据的可靠性。

- 诊室血压测量采用经验证的欧姆龙 HEM-9200T 振荡式血压计，分钟后连续测量 3 次，取平均值用于分析，符合血压测量的规范。
- 动态血压监测使用经欧洲高血压学会推荐且验证的 Mobil-O-GP 06:00-22:00 每 20 分钟一次，夜间 22:00-06:00 每 30 分钟一次把控 (有效记录需覆盖 20 小时以上，白天至少 20 个读数，夜准确性和完整性，为血压及血压变异性的评估提供了可靠依据。

(五) 数据分析

- 优势：**数据分析方法选择恰当，针对交叉设计的特点，采用配对 t 检验比较联合用药与单药治疗之间的主要和次要结局指标，能有效利用同一患者的自身对照信息；在比较两种单药治疗效果时，采用协方差分析，调整了基线时相应的血压、心率和血压变异性指标，减少了基线差异对结果的影响；同时明确设定 $P < 0.05$ 为差异有统计学意义，统计检验水准清晰。
- 不足：**未充分考虑多重比较问题，研究中涉及多个结局指标 (如不同时间点的比较，多次统计检验可能增加 I 类错误 (假阳性) 的发生概率，Holm-Bonferroni 校正等方法控制多重比较的风险，可能导致部分统计结

(六) 潜在偏倚

- 测量偏倚：**开放标签设计使得研究者在血压测量过程中可能存在主观倾向，结果可能更关注“降低”的趋势，从而影响测量数据的客观性。
- 选择偏倚：**研究为单中心研究，研究对象仅来源于上海瑞金医院的门诊患者，特征相对集中，可能无法代表广大 1 级高血压患者的整体情况，导致偏倚。
- 依从性偏倚：**虽然采用药片计数法评估患者的用药依从性，且报告的依从性 (治疗组 95.0%)，但仍有部分患者 (联合用药组 4 例，单药治疗组 3 例) 未分患者的实际用药情况不明，可能存在依从性问题，进而对研究结果产生

(七) 可重复性

- 优势：**研究方案详细，包括研究设计、纳入排除标准、干预措施 (药物剂方法 (血压测量仪器、测量流程、动态血压监测参数)、结局指标定义) 及统计方法，为其他研究者重复该研究提供了清晰的操作指南。
- 不足：**样本量较小且为单中心研究，使得研究结果的稳定性和可靠性受到在随机误差较大的情况，其他研究者在不同中心、不同人群中重复该研果，降低了研究的可重复性。

(八) 伦理问题

研究严格遵循伦理规范，伦理审查合格。研究方案已获得上海交通大学医学伦理委员会批准 (2021-71)，并按照《赫尔辛基宣言》原则开展；所有研究对象均签署知情同意书，明确了研究目的、潜在风险和获益，保障了研究对象的知情权和自主权；研究过程中，对患者进行了经济负担，同时对患者的不良事件进行密切监测，关注患者的安全

二、优点与不足总结

(一) 优点

- 测量工具可靠：**选用经验证的血压测量仪器 (诊室血压计和动态血压监测仪)，并严格按照标准化流程进行测量，确保了血压及血压变异性数据的准确性和可靠性，为研究结果的真实性提供了有力保障。
- 研究设计合理 (交叉设计)：**采用随机交叉试验设计，能有效控制个体间差异，减少混杂因素的影响，同一患者先后接受不同治疗方案，可更精准地比较不同干预措施的效果，提高了研究的内部真实性；同时设置洗脱期，避免了前序治疗对后续治疗效果的干扰。

(二) 不足

- 样本量不足：**实际纳入分析的样本量仅 31 例，且联合用药与单药治疗在关键指标 (日间收缩压 SD) 上的差异远小于样本量估算时的设定值，导致研究统计效能不足，难以准确检测出联合用药与单药治疗在血压变异性影响方面的真实差异，可能得出假阴性结果。
- 单中心、开放标签设计存在局限：**单中心研究导致研究结果的外推性受限，难以推广到更广泛的患者群体；开放标签设计易引入主观偏倚 (如测量偏倚)，可能影响研究结果的客观性和真实性。

三、改进建议

- 扩大样本量并开展多中心研究：**增加样本量以提高研究的统计效能，确保能够准确检测出不同治疗方案之间的差异；同时开展多中心研究，纳入来自不同地区、不同级别医院的患者，使研究对象更具代表性，提高研究结果的外推性和普适性。
- 采用双盲设计：**将开放标签设计改为双盲设计，使研究者和患者均不知晓治疗方案，可有效减少主观偏倚 (如测量偏倚、报告偏倚)，提高研究结果的客观性和真实性；可通过使用外观、剂型相同的安慰剂来实现双盲。
- 控制多重比较风险：**在进行多个结局指标的统计分析时，采用适当的方法 (如 Bonferroni 校正、Holm-Bonferroni 校正等) 控制多重比较的风险，降低 I 类错误 (假阳性) 的发生概率，提高统计结果的可靠性。
- 加强依从性监测与管理：**优化依从性评估方法，除药片计数法外，可结合患者自我报告、电子药盒监测等方式，更全面、准确地评估患者的用药依从性；对于依从性较差的患者，及时采取干预措施 (如加强健康教育、简化用药方案等)，提高患者的依从性，减少依从性偏倚对研究结果的影响。

整体质量评价

effect_of_a_calcium_channel_blocker_and__blocker.4.pdf

仔细阅读我提供的文献，请从：1) 按研究问题清晰度、设计、样本、测量工具、分析方法、结果透明度、偏倚等逐篇点评；2) 总结最常见的 5 个方法学问题；3) 给出整体印象（高/中/低质量）并说明原因。



深度思考

技能



文献

《effect_of_a_calcium_channel_blocker_and___blocker.4.pdf》

方法学评价与整体印象

一、逐维度点评

(一) 研究问题清晰度

研究问题清晰且聚焦，核心目标明确。旨在比较硝苯地平或阿替洛尔单药治疗，在降低血压变异性 (BPV) 方面的疗效，明确界定评价指标 (诊室血压、动态血压、心率、设计与结果解读提供了明确方向¹。

(二) 研究设计

研究采用单中心、开放标签、随机交叉设计。

- 优势:** 交叉设计可利用同一患者作为混杂因素对结果的干扰；同时设置1周产生叠加影响，提升了不同治疗方案
- 局限:** 单中心设计导致研究对象仅来自存在偏差；开放标签设计使研究者与患者对症状的差异化报告²，影响结果

(三) 样本量

样本量不足且统计效能有限。研究基于预期差异为 1.4mmHg、标准差为 2.5mmHg，31 例纳入分析³。实际结果显示，联合样本量估算时的设定值，导致研究在检测充分验证联合用药在 BPV 改善上的优势

(四) 测量工具

测量工具选择规范且经过验证。

- 诊室血压测量采用经美国龙 HEM-9200T 振荡式血压数据准确⁴。
- 动态血压监测使用符合每 20 分钟 1 次、夜间天≥20 个读数、夜间≥可靠性⁵。

(五) 分析方法

分析方法选择基本恰当，但

- 优势:** 针对交叉设计比较两种单药治疗效果时，明确设定 P<0.05 为统计
- 局限:** 研究涉及多个结局，Bonferroni 校正、Holm 低部分统计结果的可信

(六) 结果透明度

结果报告整体透明，但部分基线数据 (表 1、表 2)、标注了统计方法与 P 值；读者追溯数据来源与验证充分数字内容⁶，未直接呈现

(七) 潜在偏倚

存在多种潜在偏倚，需重点关注。

- 测量偏倚:** 开放标签设计下，研究者知晓治疗方案，可能在血压测量 (如操作规范性、读数取舍) 中存在主观倾向，影响数据客观性；
- 选择偏倚:** 单中心入组导致研究对象地域集中，且非除了合并糖尿病、严重心血管疾病等患者，样本代表性受限，结果难以推广至更广泛高血压人群；
- 依从性偏倚:** 4 例联合用药组患者与 3 例单药治疗组患者因药片盒丢失无法评估依从性，这部分患者的实际用药情况不明，可能存在漏服、错服等问题，干扰治疗效果判断⁷；
- 统计偏倚:** 多重比较未校正及样本量不足导致的统计效能不足，可能分别增加假阳性与假阴性结果风险。

二、最常见的 5 个方法学问题

- 样本量不足与统计效能有限:** 实际纳入分析 (SD) 上的差异远小于样本量估算设定值，导致统计效能不足⁸。
- 单中心与开放标签设计缺陷:** 单中心研究影响研究结果的客观性与普适性⁹。
- 多重比较未控制风险:** 针对多个结局指标的统计结果可靠性¹⁰。
- 依从性监测不完整:** 部分患者因药片盒丢失干扰，存在依从性偏倚¹¹。
- 补充数据获取不便:** 基线血生化指标、动态影响结果验证与信息获取效率¹²。

三、整体印象：中等质量研究

判定依据

- 优势支撑“中等质量”定位:** 研究问题清晰，核心目标明确；采用交叉设计并设置洗脱期，内部真实性有一定保障；测量工具经过验证且操作规范，数据可靠性较高；结果报告整体透明，关键指标与统计方法详细呈现，为结果解读提供了充分依据¹³。
- 局限限制“高质量”突破:** 样本量不足导致统计效能有限，单中心与开放标签设计引入偏倚，多重比较未控制风险，这些方法学缺陷削弱了结果的可信度与外推性，无法达到高质量研究标准；但研究未出现伦理违规、数据造假等严重问题，且核心结论 (联合用药可降低日间 BPV 但不优于单药) 有一定数据支撑，故不判定为低质量¹⁴。

总体而言，该研究在设计与执行上有合理之处，但存在明显方法学局限，需谨慎解读结果，其结论需多中心、大样本、双盲设计的研究进一步验证。



发现研究机会

- 请基于我提供的文献，帮我：1) 列出 5 个研究空白；2) 转化为具体研究问题/假设（写明变量关系）；3) 推荐研究方法（实验、纵向、跨文化等）；4) 按重要性+可行性排序，并说明理由。
- 请基于我提供的文献，总结未来 5-8 个研究方向。每个方向需包含：标题、研究意义、方法建议、潜在贡献。最后按“创新性、可行性、影响力”打分，并推荐优先研究的 2-3 个方向。



基于硝苯地平 / 阿替洛尔联合用药研究的空白、问题设计与未来方向

一、5 个研究空白及对应研究问题、方法与排序

(一) 研究空白 1: 联合用药对夜间血压变异性 (BPV) 的影响

- 研究问题 / 假设:** 在 1 级高血压患者中, 相较于硝苯地平或阿替洛尔 (10/20mg) 是否能通过调节交感神经活性, 降低夜间收缩压 / 舒张压, 因变量: 夜间 BPV 指标、交感神经活性指标; 假设: 联合用药为中介变量。
- 推荐研究方法:** 前瞻性队列研究 (纳入夜间 BPV 升高的 1 级高血压患者) 与心率变异性 (HRV, 评估交感神经活性) 检测, 比较联合用药与单药组。
- 重要性: ★★★★★** (夜间 BPV 与靶器官损伤及心血管事件风险密切相关, BPV 无显著影响的机制, 填补空白可优化治疗策略)
- 可行性: ★★★★★** (动态血压监测与 HRV 检测技术成熟, 样本易招募)

(二) 研究空白 2: 联合用药对不同亚型高血压患者 (如单纯收缩压型) 的疗效差异未知

- 研究问题 / 假设:** 在 1 级高血压患者中, 相较于硝苯地平单药治疗, 联合用药对降低收缩压 SD 的降低效果, 显著优于对单纯舒张压型高血压患者; 因变量: 日间收缩压 / 舒张压 SD; 假设: 高血压亚型影响联合用药疗效。
- 推荐研究方法:** 分层随机对照试验 (按高血压亚型分为单纯收缩压型与单纯舒张压型), 6 周干预后比较 BPV 差异。
- 重要性: ★★★★★** (不同亚型高血压患者病理生理机制不同, 明确亚型有助于精准治疗)
- 可行性: ★★★★★** (多中心可招募足够亚型患者, 分层设计不增数据可比性强)

(三) 研究空白 3: 联合用药长期 (>6 周) 对 BPV 及靶器官损伤 (如左心室肥厚) 的影响未验证

- 研究问题 / 假设:** 在 1 级高血压患者中, 长期 (12 个月) 使用硝苯地平 / 阿替洛尔联合用药, 相较于短期 (6 周) 使用, 可进一步降低日间 BPV, 并减少左心室心肌质量指数 (LVMI) 升高风险 (自变量: 用药时长、治疗方案; 因变量: 日间 BPV 指标、LVMI; 假设: 用药时长延长可增强联合用药对 BPV 的改善及靶器官保护作用)。
- 推荐研究方法:** 纵向队列研究 (随访 12 个月), 分别在 6 周、12 个月时检测 BPV 与 LVMI (超声心动图评估), 比较不同时间点联合用药组与单药组的差异。
- 重要性: ★★★★★** (长期疗效与靶器官保护是高血压治疗核心目标, 当前研究仅为 6 周短期干预, 无法指导长期用药决策)
- 可行性: ★★★★★** (需长期随访, 存在患者失访风险, 且 LVMI 检测需专业设备, 但多中心合作可降低随访难度)

(四) 研究空白 4: 联合用药中硝苯地平 (短效) 与阿替洛尔 (长效) 的剂量比对 BPV 的优化空间未探索

- 研究问题 / 假设:** 在 1 级高血压患者中, 硝苯地平 / 阿替洛尔联合用药的不同剂量配比 (10/20mg、10/12.5mg、5/20mg) 中, 10/20mg 配比在降低日间收缩压平均真实变异性方面的效果最优, 且不良反应发生率无显著升高 (自变量: 剂量配比; 因变量: 日间 BPV 指标、不良反应发生率; 假设: 存在最优剂量配比平衡疗效与安全性)。
- 推荐研究方法:** 多剂量随机对照试验 (设置 3 种剂量配比组), 6 周干预后比较 BPV 与不良反应 (如头痛、心动过缓) 差异, 采用剂量 - 反应分析确定最优配比。
- 重要性: ★★★★★** (当前固定剂量配比可能不适用所有患者, 探索最优配比可提升用药安全性)
- 可行性: ★★★★★** (剂量调整方案简单, 不良反应易于监测)

(五) 研究空白 5: 合并阻塞性睡眠呼吸暂停 (OSA) 患者联合用药疗效评估

- 研究问题 / 假设:** 在合并轻度 OSA 的 1 级高血压患者中, 联合用药降低夜间 BPV (SD) 的效果更显著, 且 OSA 严重程度影响联合用药疗效 (自变量: 治疗方案、OSA 严重程度; 因变量: 夜间 BPV 改善效果)。
- 推荐研究方法:** 病例对照研究 (分为合并 OSA 的联合用药组与单药组), 6 周干预后比较 BPV, 同时检测 AHI。
- 重要性: ★★★★★** (OSA 与高血压及 BPV 升高密切相关, 明确 OSA 患者联合用药疗效, 结果无法覆盖该人群)

排序结果 (按重要性 + 可行性综合排序)

- 研究空白 1 (夜间 BPV 影响及机制):** 重要性最高 (夜间 BPV 与预后直接相关), 可行性较高 (技术成熟, 样本易招募), 优先解决可填补“联合用药对昼夜 BPV 影响差异”的核心空白, 指导临床优化夜间血压管理。
- 研究空白 2 (不同亚型高血压疗效差异):** 重要性较高 (精准治疗需求迫切), 可行性高 (分层设计简单, 多中心可实现), 可快速为不同亚型患者提供用药依据, 临床转化价值高。
- 研究空白 3 (长期疗效与靶器官保护):** 重要性最高, 但可行性略低 (长期随访), 虽需克服失访问题, 但结果可验证联合用药的长期获益, 对指南制定至关重要。
- 研究空白 4 (剂量配比优化):** 重要性中等, 可行性较高, 可优化用药方案, 但当前固定剂量已显示一定疗效, 优先级低于前三者。
- 研究空白 5 (合并 OSA 患者疗效):** 重要性中等, 可行性最低 (OSA 检测成本高), 虽覆盖特殊人群, 但适用范围较窄, 优先级最低。

二、未来 5-8 个研究方向

(一) 研究方向 1: 硝苯地平 / 阿替洛尔联合用药对夜间 BP

- **标题:** 硝苯地平 / 阿替洛尔联合用药通过调节交感神经活性改善
- **研究意义:** 当前研究显示联合用药对夜间 BPV 无显著影响, 但夜
- **方法建议:** 多中心随机对照试验, 纳入 120 例 1 级高血压且夜间
- **潜在贡献:** 首次明确联合用药对夜间 BPV 的影响机制, 为合并
- **打分:** 创新性★★★★☆ (聚焦夜间 BPV 机制)、可行性★★★★☆ (夜间血压管理)

(二) 研究方向 2: 硝苯地平 / 阿替洛尔联合用药在不同亚

- **标题:** 硝苯地平 / 阿替洛尔联合用药对单纯收缩期与舒张期 1 级
- **研究意义:** 单纯收缩期与舒张期高血压的病理机制 (如动脉弹性
- **方法建议:** 分层随机对照试验, 按高血压亚型分为单纯收缩期组
- **潜在贡献:** 为不同亚型高血压患者提供个体化用药推荐, 例如明
- **打分:** 创新性★★★★☆ (聚焦亚型差异)、可行性★★★★☆ (分



(三) 研究方向 3: 硝苯地平 / 阿替洛尔联合用药长期 (12 个月) 对 BPV 及左心室肥厚的影响研究

- **标题:** 硝苯地平 / 阿替洛尔联合用药长期干预对 1 级高血压患者血
- **研究意义:** 当前研究仅为 6 周短期干预, 无法验证联合用药的长期
- **方法建议:** 多中心纵向队列研究, 纳入 150 例 1 级高血压患者, 均
- **潜在贡献:** 验证联合用药的长期疗效与靶器官保护价值, 为临床长
- **打分:** 创新性★★★★☆ (聚焦长期效应)、可行性★★★★☆ (需长

(四) 研究方向 4: 硝苯地平 / 阿替洛尔不同剂量配比对 1 级

- **标题:** 硝苯地平 / 阿替洛尔不同剂量配比对 1 级高血压患者血压变
- **研究意义:** 当前研究采用固定剂量配比 (10/20mg), 未探索剂量
- **方法建议:** 多剂量随机对照试验, 设置 3 种剂量配比组 (10/20mg
- **潜在贡献:** 提出联合用药的个体化剂量推荐, 例如老年患者推荐低
- **打分:** 创新性★★★★☆ (聚焦剂量优化)、可行性★★★★☆ (剂量

(五) 研究方向 5: 合并轻中度 OSA 的 1 级高血压患者中硝

- **标题:** 硝苯地平 / 阿替洛尔联合用药改善合并轻中度 OSA 的 1 级
- **研究意义:** OSA 可通过反复低氧激活交感神经, 加剧 BPV 升高, 研
- **方法建议:** 病例对照研究, 纳入 80 例合并轻中度 OSA (AHI 5-30)
- **潜在贡献:** 明确联合用药在合并 OSA 高血压患者中的适用性, 例
- **打分:** 创新性★★★★☆ (聚焦 OSA 合并人群)、可行性★★★★☆ (

(六) 研究方向 6: 硝苯地平 / 阿替洛尔联合用药对 BPV 的改善与心血管事件风险的关联研究

- **标题:** 硝苯地平 / 阿替洛尔联合用药改善血压变异性对 1 级高血压患者心血管事件风险的前瞻性队列研究
- **研究意义:** BPV 是心血管事件的独立预测因子, 但当前研究未探索联合用药通过改善 BPV 降低心血管事件
- **方法建议:** 多中心前瞻性队列研究, 纳入 300 例 1 级高血压患者, 分为联合用药组 (10/20mg) 与单药组
- **潜在贡献:** 首次验证联合用药通过改善 BPV 降低心血管事件风险的效果, 为其作为高 BPV 高血压患者的优先
- **打分:** 创新性★★★★☆ (聚焦预后关联)、可行性★★★★☆ (随访周期长)、影响力★★★★☆ (建立疗效 -

(七) 研究方向 7: 硝苯地平 / 阿替洛尔联合用药与其他降压药 (如 ACEI 类) 对 BPV 疗效的头对头

- **标题:** 硝苯地平 / 阿替洛尔联合用药与培哚普利单药对 1 级高血压患者血压变异性疗效的头对头随机对照试验
- **研究意义:** 当前研究仅与同类型单药 (钙通道阻滞剂、β 受体阻滞剂) 比较, 未与其他类别降压药 (如
- **方法建议:** 多中心头对头随机对照试验, 纳入 120 例 1 级高血压患者, 随机分为联合用药组 (10/20mg) 与
- **潜在贡献:** 明确联合用药相较于 ACEI 类药物在 BPV 改善上的优势或劣势, 为临床药物选择提供更全面的证
- **打分:** 创新性★★★★☆ (头对头比较)、可行性★★★★☆ (药物易获取)、影响力★★★★☆ (指导药物选

优先推荐研究方向 (2-3 个)

1. 硝苯地平 / 阿替洛尔联合用药对夜间 BPV 的影响及交感神经活性介导作用研究: 创新性较高 (聚焦未明确的
2. 硝苯地平 / 阿替洛尔联合用药长期 (12 个月) 对 BPV 及左心室肥厚的影响研究: 虽随访周期长 (可行性略
3. 硝苯地平 / 阿替洛尔联合用药改善 BPV 与心血管事件风险的关联研究: 创新性与影响力顶尖, 虽随访周期最



一、Pubmed简介



二、基本规则



三、检索与利用



四、其他...



復旦大學

THANKS

2025年9月24日星期三

