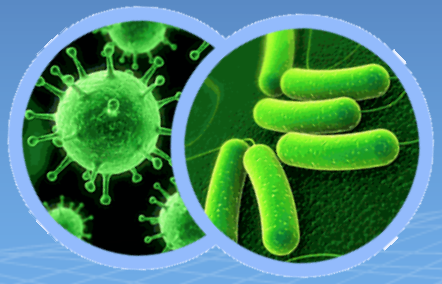
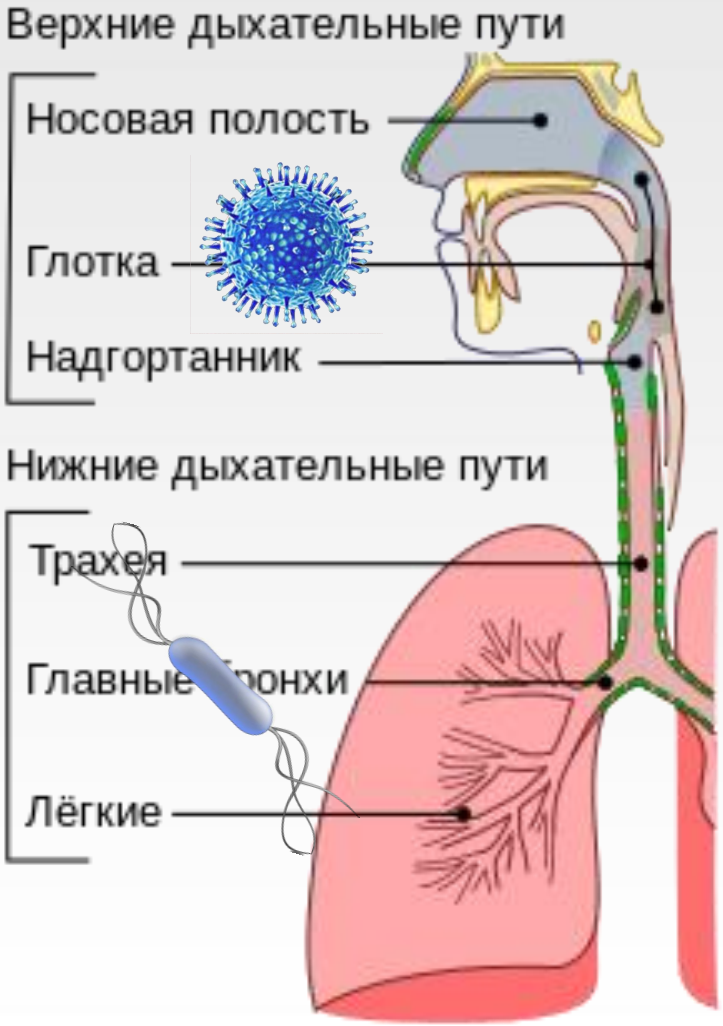
Респираторные инфекции: вирусы vs. бактерии – от мифов к поиску истины



Рузанов Дмитрий Юрьевич

Беларусь

Кто «владеет» респираторным трактом?



Bull World Health Organ. 2008 Jun; 86(6): 494–496. doi: 10.2471/BLT.08.052753

World Health Organization
REGIONAL OFFICE FOR Europe

«Кто владеет респираторным трактом – тот владеет миром» - *эпидемиология ОРИ*

- Более **65%** от общей заболеваемости.
- Более **40%** от дней нетрудоспособности (в т.ч. **60%** по уходу).
- Симптомы ОРЗ у **15-45%** круглогодично.
- **9-17%** смертности.
- Реальное число заболевших в **1,5 – 3,7** раза выше.

Кривые заболеваемости ОРИ однонапрелены с количеством выписанных рецептов на АБП (в целом)

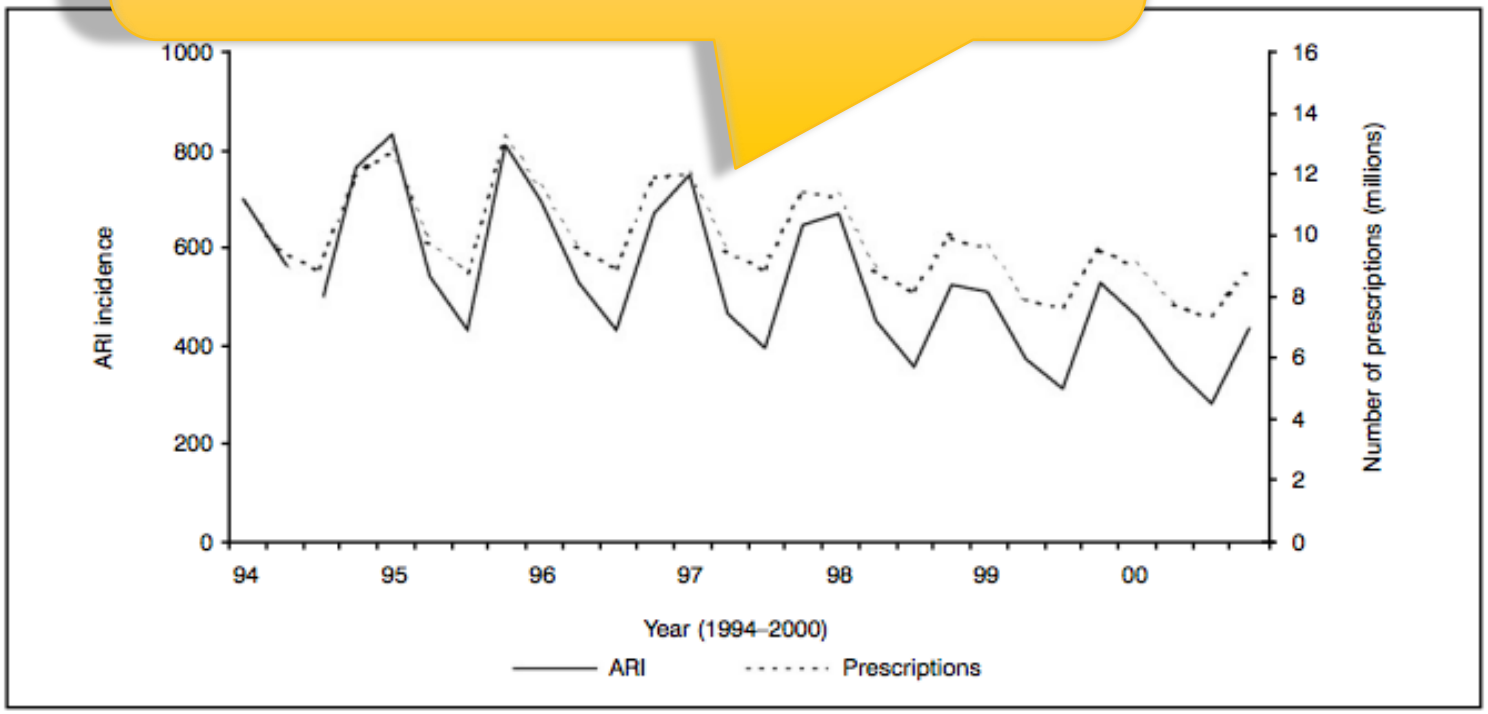
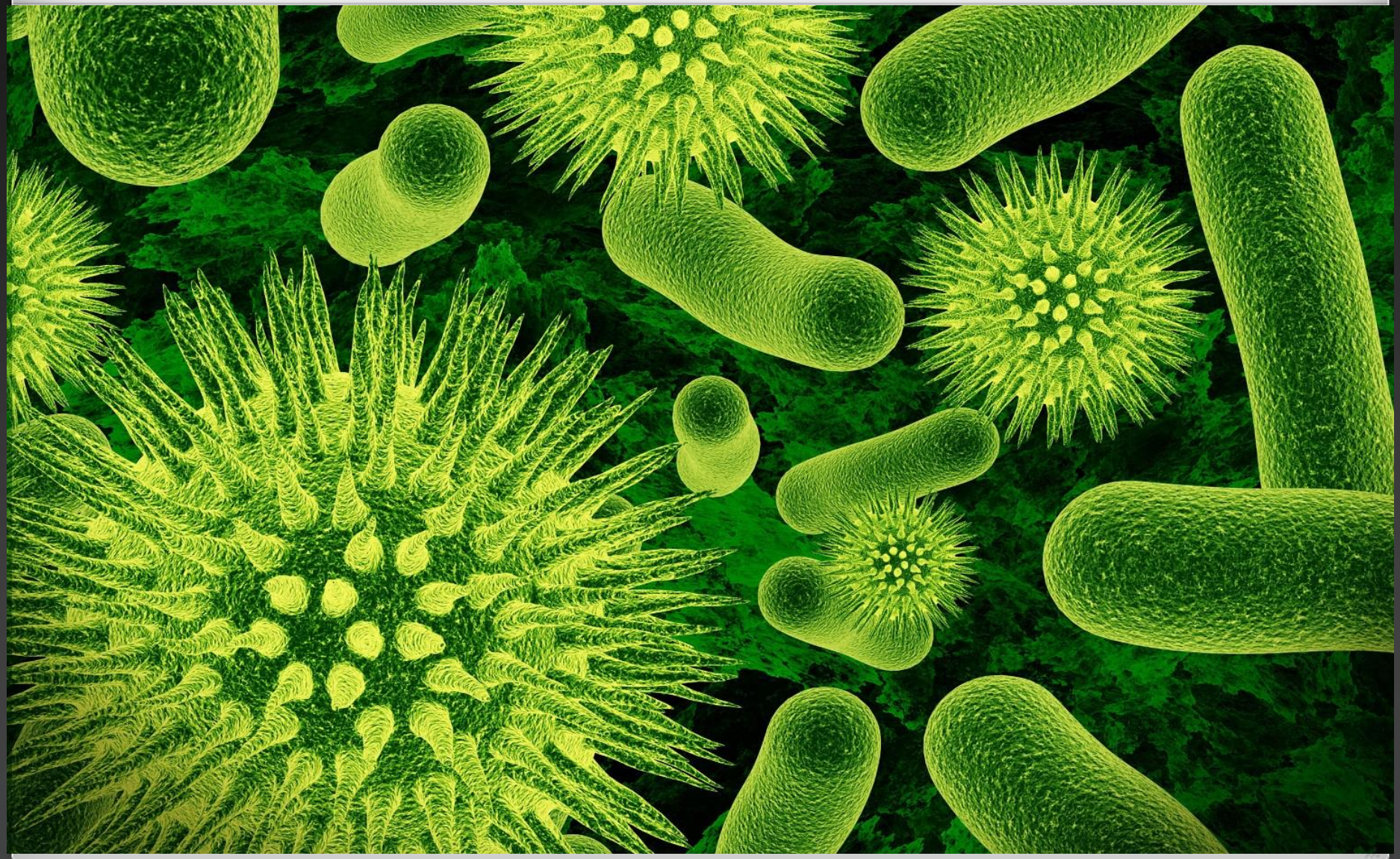


Figure 4. Mean weekly incidence of acute respiratory infections (ARI) versus number of prescriptions for antibiotics.

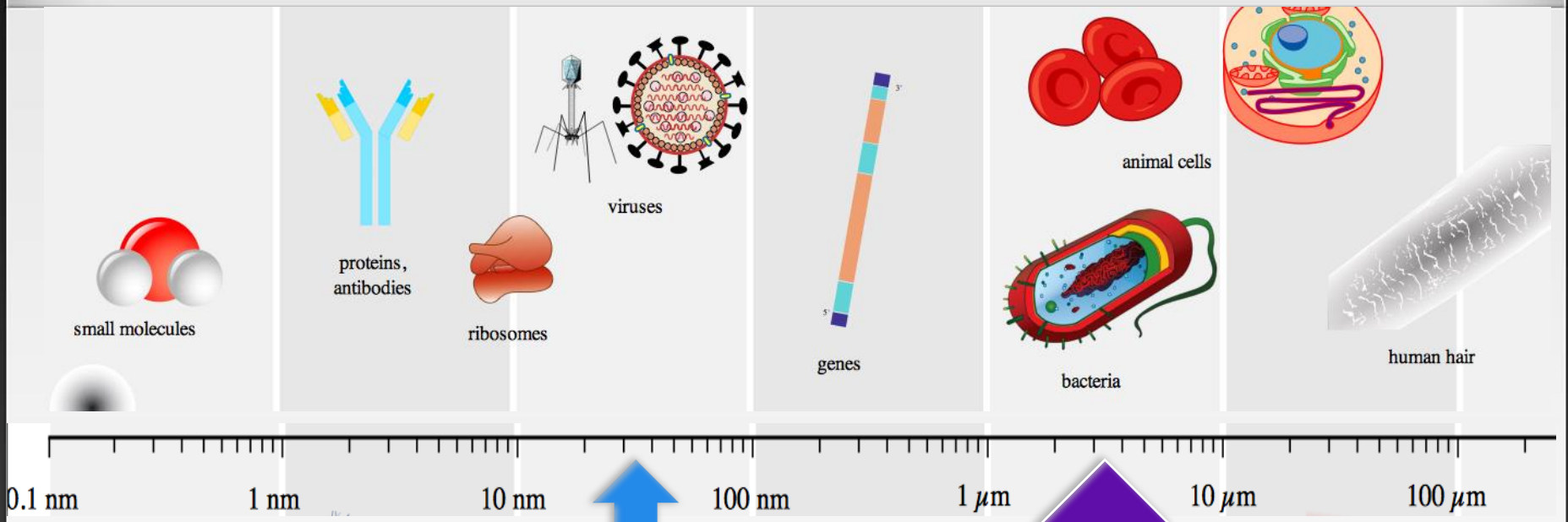
D M Fleming, A M Ross, K W Cross and H Kendall

The reducing incidence of respiratory tract infection and its relation to antibiotic prescribing

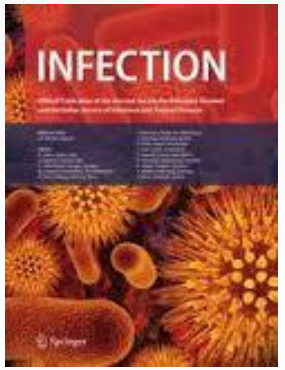
Размер имеет значение ?



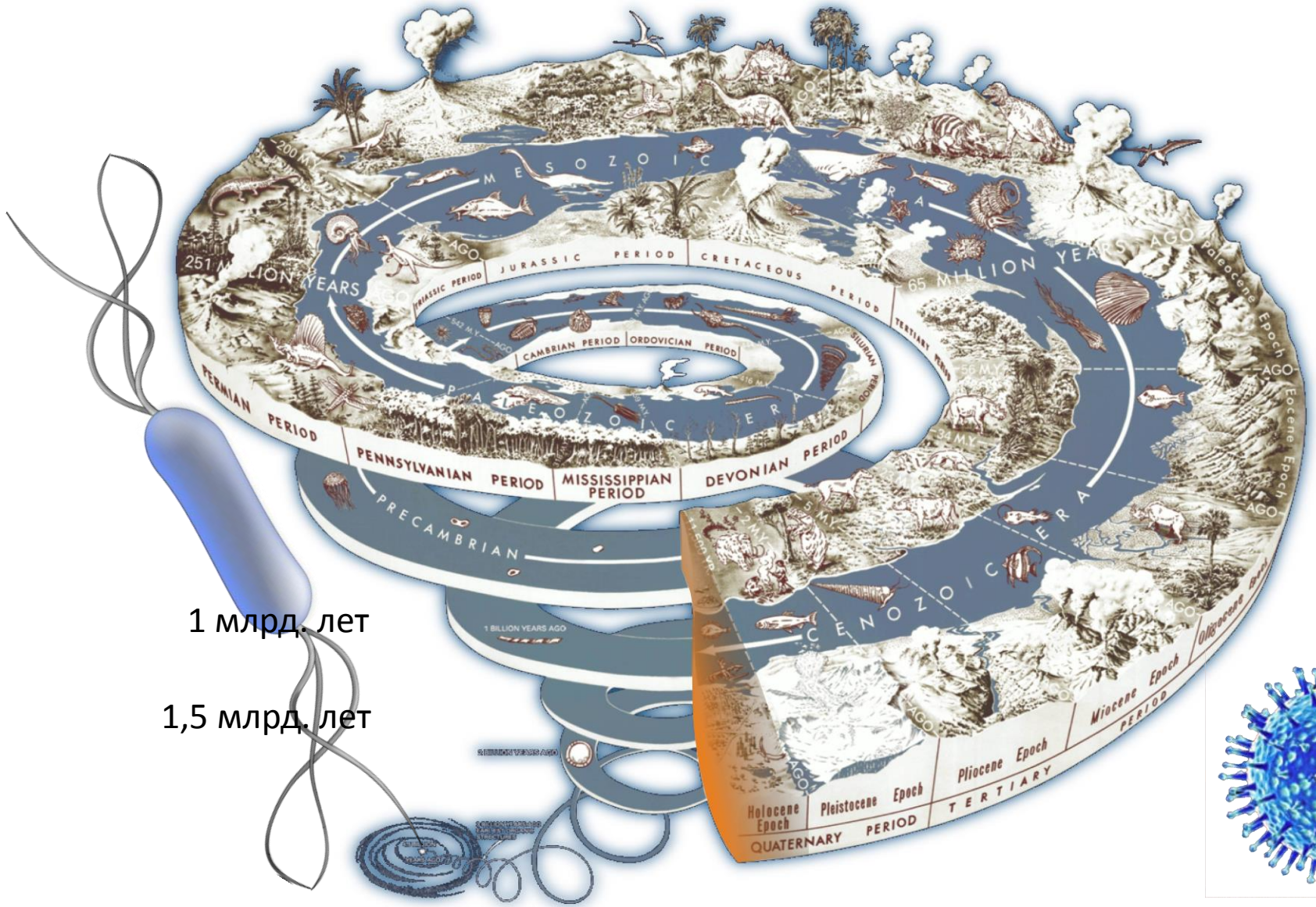
Размер имеет значение ?



КТО КРУПНЕЕ ?



Кто старше?



1 млрд. лет

1,5 млрд. лет

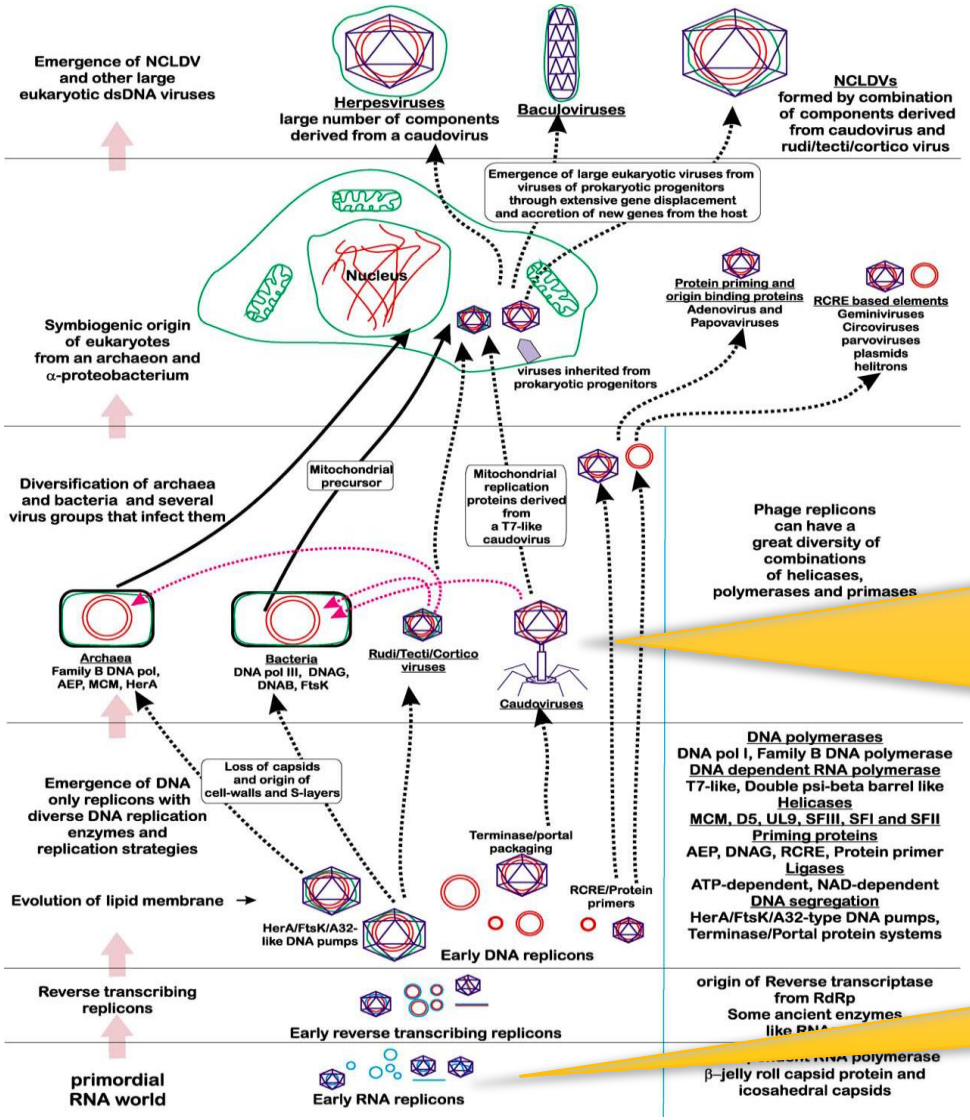
Использован рисунок N.Byrds A. 2013. New York Times 16 (59)

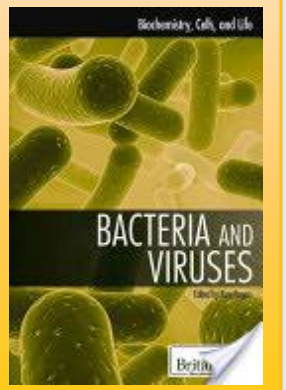
Virus Research 117 (2006) 156–184

Evolutionary genomics of nucleo-cytoplasmic large DNA viruses

Lakshminarayan M. Iyer, S. Balaji, Eugene V. Koonin, L. Aravind

Теория КОЭВОЛЮЦИИ





Кара Роджерс

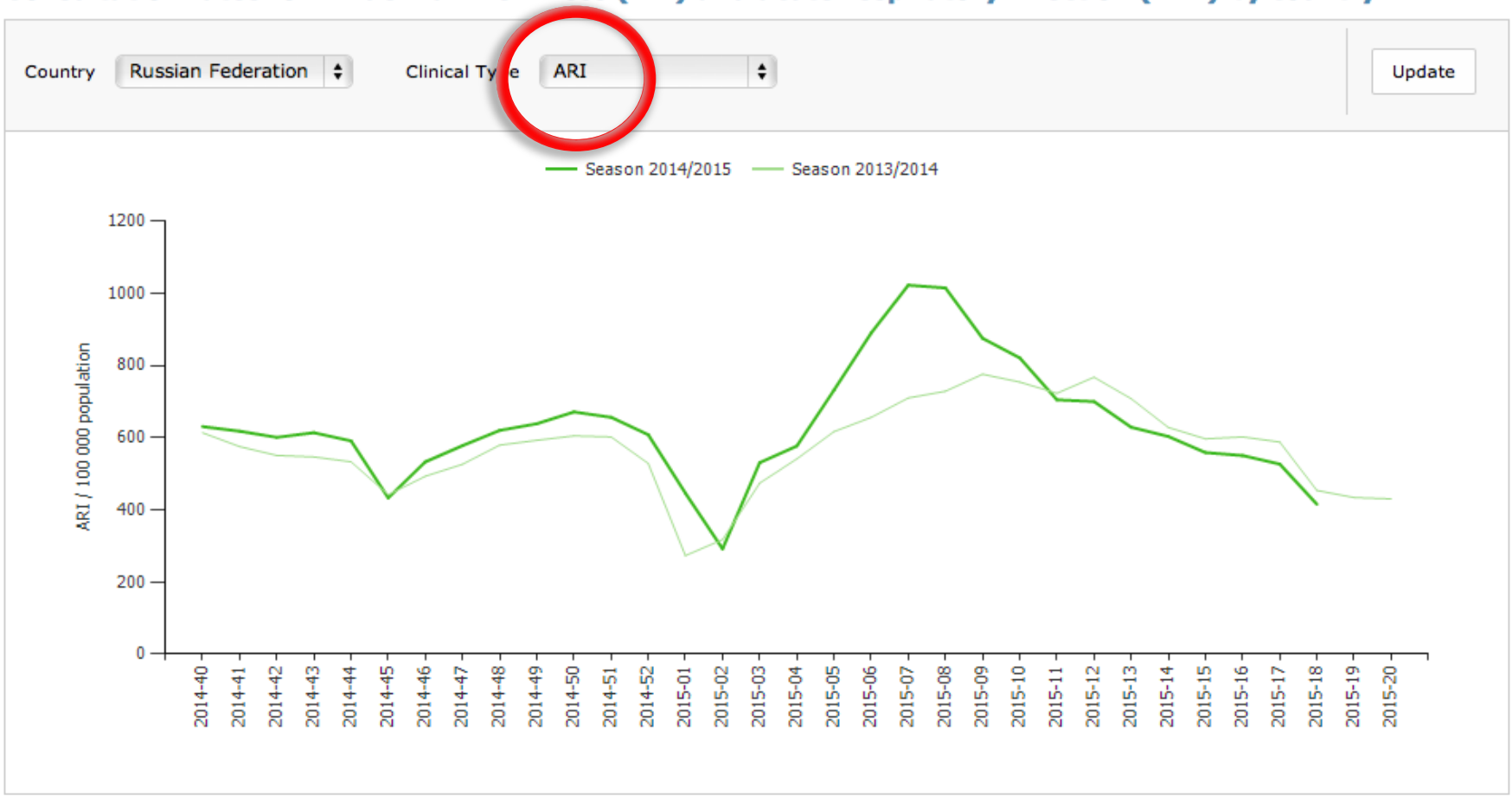
Вироиды

http://www.flunewseurope.org

Flu News Europe

Joint ECDC–WHO/Europe weekly influenza update

Consultation rates for influenza-like illness (ILI) and acute respiratory infection (ARI) by country



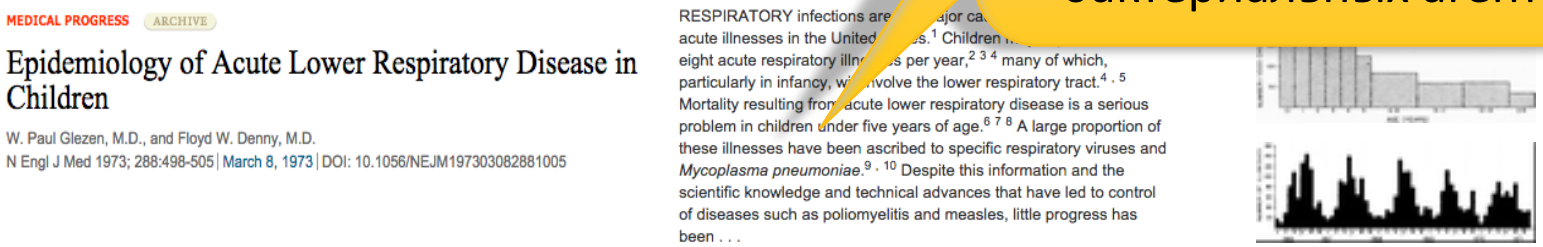
The NEW ENGLAND JOURNAL of MEDICINE

Epidemiology of Acute Lower Respiratory Disease in Children

W. Paul Glezen, M.D., and Floyd W. Denny, M.D.

N Engl J Med 1973; 288:498-505March 8, 1973DO
10.1056/NEJM197303082881005

6 возбудителей;
Респираторный микоплазмоз;
Невысокая значимость бактериальных агентов



MEDICAL PROGRESS ARCHIVE

Epidemiology of Acute Lower Respiratory Disease in Children

W. Paul Glezen, M.D., and Floyd W. Denny, M.D.
N Engl J Med 1973; 288:498-505 | March 8, 1973 | DOI: 10.1056/NEJM197303082881005

RESPIRATORY infections are ajor ca
acute illnesses in the United s.[1] Children
eight acute respiratory illn s per year,[2 3 4] many of which,
particularly in infancy, w volve the lower respiratory tract.[4 · 5]
Mortality resulting fro cute lower respiratory disease is a serious
problem in children under five years of age.[6 7 8] A large proportion of
these illnesses have been ascribed to specific respiratory viruses and
Mycoplasma pneumoniae.[9 · 10] Despite this information and the
scientific knowledge and technical advances that have led to control
of diseases such as poliomyelitis and measles, little progress has
been . . .

http://www.nejm.org/doi/full/10.1056/NEJM197303082881005

Динамика заболеваемостью ОРИ

Адаптировано по W. Paul Glezen, 1973

Динамика заболеваемостью ОРИ

Адаптировано по W. Paul Glezen, 1973

Pediatr Infect Dis J. 2008; 27(2):100-105

The Pediatric Infectious Disease Journal

Viral Etiology of Acute Respiratory Infections With Cough in Infancy: A Community-Based Birth Cohort Study

Nicolas Regamey, MD, Laurent Kaiser, MD, Hanna L. ... Christelle Deffernez, PhD,
Claudia E. Kuehni, MD, Philipp Latzin, MD, Christ...

Pediatr Infect Dis J. 2008;27(2):100-105.

Comment

References

Когортное исследование ОРИ вирусной этиологии сопровождаемой кашлем

completed the study did not experience any ARI in the first year of life. Nasal swabs and complete follow-up were available for 112 (92%) of the 12... recovered in 88 of 112 (79%, 95%... coronaviruses were most c... the newly recognized coronaviruses, ... (17%) dual and 3 (3%) triple infection... rhinovirus, HCoV-NL63 and PIV-3; rh...

12 вирусов; полиэтиологичные ОРВИ; наиболее частые – рино-, коронавирусы…

D M Fleming, A M Ross, K W Cross and H Kendall

The reducing incidence of respiratory tract infection and its relation to antibiotic prescribing

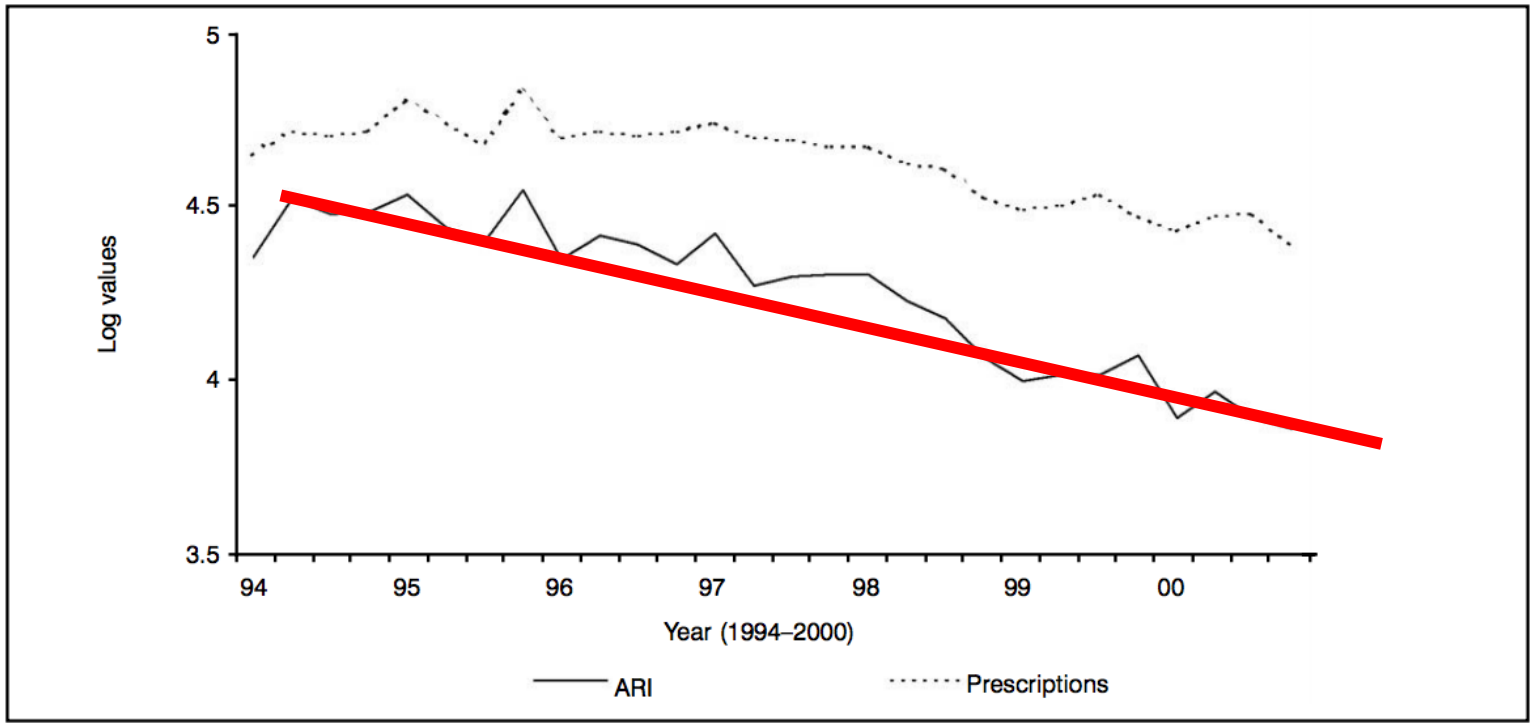


Figure 5. Seasonally adjusted trends in incidence of acute respiratory tract infections (ARI [per 1000]) and antibiotic prescriptions (per 100 000): quarterly data logged.

Новые (?) респираторные вирусы

6 **новых** вирусов, клинически связанных с респираторной инфекцией:

- метапневмовирус человека (HMPV),
- парагрипп 4,
- человеческий коронавирус NL63 и HKU1,
- вирус тяжелого острого респираторного синдрома SARSV (коронавирус)
- **bocavirus**

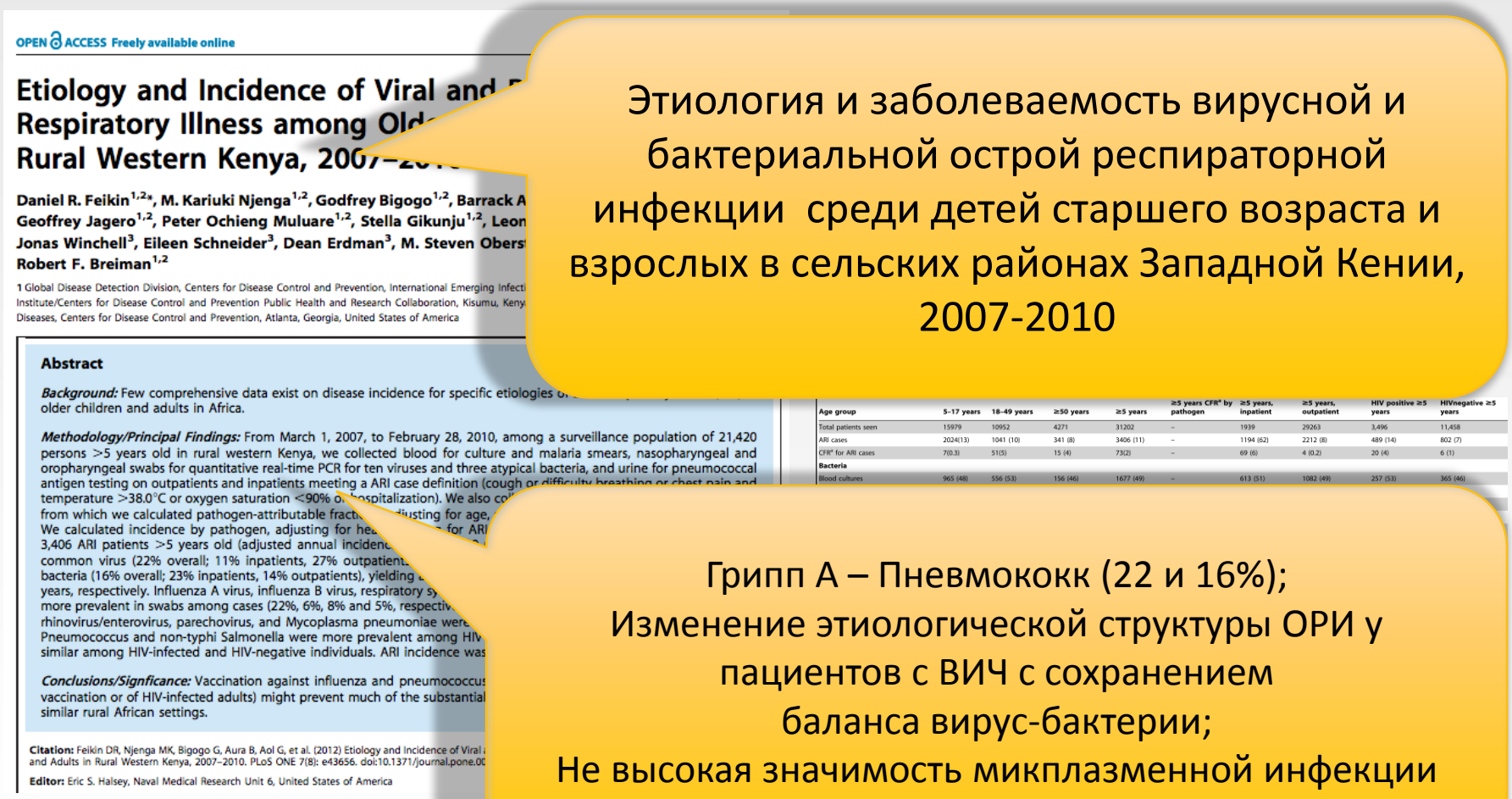
A. Pavia **Viral Infections of the Lower Respiratory Tract: Old Viruses, New Viruses, and the Role of Diagnosis** Clin Infect Dis. 2011 May 1; 52(Suppl 4): S284–S289.

Патоморфоз вирусных респираторных инфекций

- Достоверное увеличение тяжелых вирусных пневмоний.
- «Старение» микоплазменной респираторной инфекции
- Острые бронхиолиты взрослых.
- Вирусные инфекции НДП как предшественники идиопатических заболеваний легких.
- Бронхоэктазии после инфекций с bocavirus.

Nichols WG, Peck Campbell AJ, Boeckh M. **Respiratory viruses other than influenza virus: mpact and therapeutic advances.** Clin Microbiol Rev. 2008;21:274–90.

В Африке не болеют ОРИ ?



OPEN ACCESS Freely available online

Etiology and Incidence of Viral and … Respiratory Illness among Old… Rural Western Kenya, 200…–20…

Daniel R. Feikin[1,2]*, M. Kariuki Njenga[1,2], Godfrey Bigogo[1,2], Barrack A… Geoffrey Jagero[1,2], Peter Ochieng Muluare[1,2], Stella Gikunju[1,2], Leon… Jonas Winchell[3], Eileen Schneider[3], Dean Erdman[3], M. Steven Obers… Robert F. Breiman[1,2]

1 Global Disease Detection Division, Centers for Disease Control and Prevention, International Emerging Infecti… Institute/Centers for Disease Control and Prevention Public Health and Research Collaboration, Kisumu, Keny… Diseases, Centers for Disease Control and Prevention, Atlanta, Georgia, United States of America

Abstract

Background: Few comprehensive data exist on disease incidence for specific etiologies o… older children and adults in Africa.

Methodology/Principal Findings: From March 1, 2007, to February 28, 2010, among a surveillance population of 21,420 persons >5 years old in rural western Kenya, we collected blood for culture and malaria smears, nasopharyngeal and oropharyngeal swabs for quantitative real-time PCR for ten viruses and three atypical bacteria, and urine for pneumococcal antigen testing on outpatients and inpatients meeting a ARI case definition (cough or difficulty breathing or chest pain and temperature >38.0°C or oxygen saturation <90% o… hospitalization). We also co… from which we calculated pathogen-attributable fracti… justing for age, … We calculated incidence by pathogen, adjusting for hea… for ARI … 3,406 ARI patients >5 years old (adjusted annual incidenc… common virus (22% overall; 11% inpatients, 27% outpatient… bacteria (16% overall; 23% inpatients, 14% outpatients), yielding … years, respectively. Influenza A virus, influenza B virus, respiratory sy… more prevalent in swabs among cases (22%, 6%, 8% and 5%, respectiv… rhinovirus/enterovirus, parechovirus, and Mycoplasma pneumoniae were… Pneumococcus and non-typhi Salmonella were more prevalent among HIV… similar among HIV-infected and HIV-negative individuals. ARI incidence was…

Conclusions/Signficance: Vaccination against influenza and pneumococcus… vaccination or of HIV-infected adults) might prevent much of the substantial… similar rural African settings.

Citation: Feikin DR, Njenga MK, Bigogo G, Aura B, Aol G, et al. (2012) Etiology and Incidence of Viral … and Adults in Rural Western Kenya, 2007–2010. PLoS ONE 7(8): e43656. doi:10.1371/journal.pone.00…

Editor: Eric S. Halsey, Naval Medical Research Unit 6, United States of America

Age group	5–17 years	18–49 years	≥50 years	≥5 years	≥5 years CFR* by pathogen	≥5 years, inpatient	≥5 years, outpatient	HIV positive ≥5 years	HIVnegative ≥5 years
Total patients seen	15979	10952	4271	31202	–	1939	29263	3,496	11,458
ARI cases	2024(13)	1041 (10)	341 (8)	3406 (11)	–	1194 (62)	2212 (8)	489 (14)	802 (7)
CFR* for ARI cases	7(0.3)	51(5)	15 (4)	73(2)	–	69 (6)	4 (0.2)	20 (4)	6 (1)
Bacteria									
Blood cultures	965 (48)	556 (53)	156 (46)	1677 (49)	–	613 (51)	1082 (49)	257 (53)	365 (46)

Этиология и заболеваемость вирусной и бактериальной острой респираторной инфекции среди детей старшего возраста и взрослых в сельских районах Западной Кении, 2007-2010

Грипп А – Пневмококк (22 и 16%);
Изменение этиологической структуры ОРИ у пациентов с ВИЧ с сохранением баланса вирус-бактерии;
Не высокая значимость микплазменной инфекции

Liu WK, Liu Q, Chen DH, Liang HX, Chen XK, et al. (2014) Epidemiology of Acute Respiratory Infections in Children in Guangzhou: A Three-Year Study. PLoS ONE 9(5): e96674. doi:10.1371/journal.pone.0096674
http://127.0.0.1:8081/plosone/article?id=info:doi/10.1371/journal.pone.0096674

OPEN ACCESS Freely available online

PLOS ONE

Epidemiology of Acute Respiratory Infections in Children in Guangzhou: A Three-Year Study

Wen Kuan Liu[1,2☯], Qian Liu[1,2☯], De Hui Chen[2], Huan Xi Liang[1,2], Xiao Kai Chen[1,2], Mei Xin Chen[1,2], Shu Yan Qiu[1,2], Zi Yeng Yang[1,2], Rong Zhou[1,2*]

1 State Key Laboratory of Respiratory Diseases, National Clinical Research Center for Respiratory Disease, Guangzhou Medical University, Guangzhou, Guangdong, China, **2** The First Affiliated Hospital of Guangzhou Medical University, Guangzhou, Guangdong, China

Abstract

Acute Respiratory Infections (ARI) are some of the most common human diseases worldwide. However, they have a complex and diverse etiology, and the characteristics of the pathogens involved in respiratory infections in developing countries are not well understood. In this work, we analyzed the characteristics of 17 common respiratory pathogens in children (≤14 years old) with ARI in Guangzhou, southern China over a 3-year period using real-time polymerase chain reaction. Pathogens were identified in 2361/4242 (55.7%) patients, and the positivity rate varied seasonally. Ten of the 17 pathogens investigated showed positivity rates of more than 5%. The most frequently detected pathogens were respiratory syncytial virus (768/2361, 32.5%), influenza A virus (428/2361, 18.1%), enterovirus (138/2361, 13.3%), *Mycoplasma pneumoniae* (267/2361, 11.3%) and adenovirus (213/2361, 9.0%). Co-pathogens were common and found in 503 of 2361 (21.3%) positive samples. When ranked according to frequency of occurrence, the pattern of co-pathogens was similar to that of the primary pathogens, with the exception of human bocavirus, human coronavirus and human metapneumovirus. Significant differences were found in age prevalence in 10 of the 17 pathogens ($p \leq 0.009$): four basic patterns were observed, A: detection rates increased with age, B: detection rates declined with age, C: the detection rate showed distinct peaks or D: numbers of patients were too low to detect a trend or showed no significant difference among age groups ($p > 0.05$). These data will be useful for planning vaccine research and control strategies and for studies predicting pathogen prevalence.

Citation: Liu WK, Liu Q, Chen DH, Liang HX, Chen XK, et al. (2014) Epidemiology of Acute Respiratory Infections in Children in Guangzhou: A Three-Year Study. PLoS ONE 9(5): e96674. doi:10.1371/journal.pone.0096674

Editor: Cristina Costa, University Hospital San Giovanni Battista di Torino, Italy

Received November 19, 2013; **Accepted** April 10, 2014; **Published** May 5, 2014

Funding: The State Major Infectious Disease Research Program (China Central Government, 2012ZX10004-213), National Science and technology support program (2012BAI05B01), The Combination Project of Guangdong Province (2010B091000018), Research Project of Guangzhou Medical University (2012A04), and the project of Respiratory Medical R&D Centre of Guangdong Province (2010B080100027) provided financial support for this work. The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

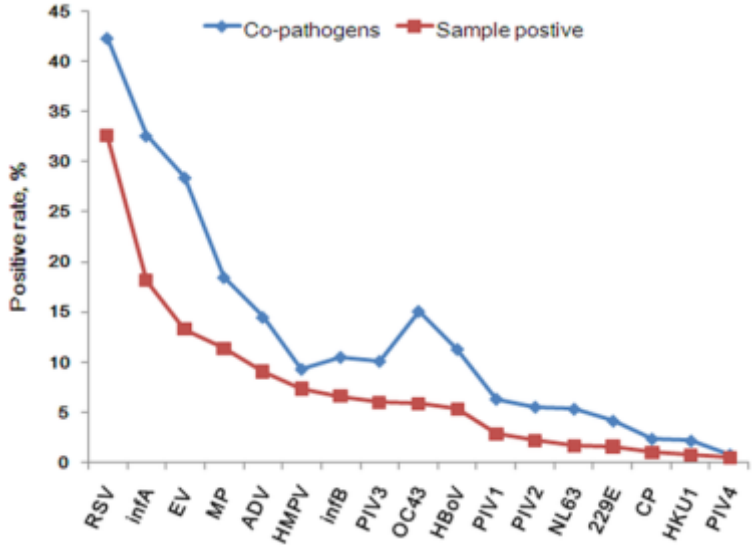
Competing Interests: The authors have declared that no competing interests exist.

* E-mail: zhourong@gird.cn

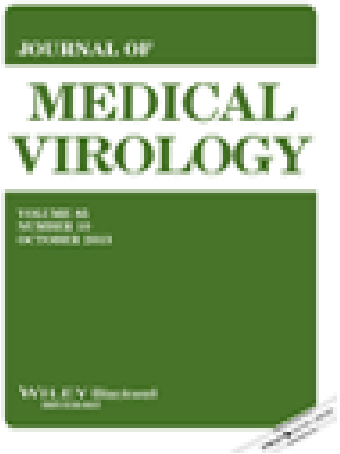
☯ These authors contributed equally to this work.

Эпидемиология ОРИ у детей в Гуанджоу: трехлетнее наблюдение

Figure 1. The rank of pathogen detection rate and co-pathogen rate in 4242 pediatric patients with ARI in Guangzhou from July 2009 to June 2012.



Одновременное выявление различных респираторных вирусов у детей с выявленным жизнеспособным респираторно-синцитиальным вирусом человека



16 JUL 2013

ical Virology 85:1852–1859 (2013)

Concurrent Detection of Other Respiratory Viruses in Children Shedding Viable Human Respiratory Syncytial Virus

T.B. Gagliardi,[1] F.E. Paula,[1] M.A. Iwamoto,[1] J.L. Proença-Modena,[1] A.E. Santos,[1] A.A. Camara,[2] M.C. Cervi,[3] O.A.L. Cintra,[3] nd E. Arruda[1]*

[1]Department of Cell and Molec iology, University of Sao Paulo School of Medicine, Ribeirão Preto, SP, Brazil
[2]Santa Lydia Hospital, Ribei SP, Brazil
[3]Department of Pediatrics, São Paulo School of Medicine, Ribeirão Preto, SP, Brazil

У 74% выявлены другие кроме HRSV вирусы, из них у 23% более двух дополнительно

Human res
important
majority o
of virus co
been base
PCR, which
tion from
from prev
whether co
ratory virus
severity of HRSV illnesses from patients who

HRSV infection; HRSV isola-
tion; respiratory virus co-infec-
tion; severity of HRSV disease

TRODUCTION

ry syncytial virus (HRSV) is a
acute respiratory infections (ARI),
especially in children. Upper HRSV infections spread

http://onlinelibrary.wiley.com/doi/10.1002/jmv.23648/abstract

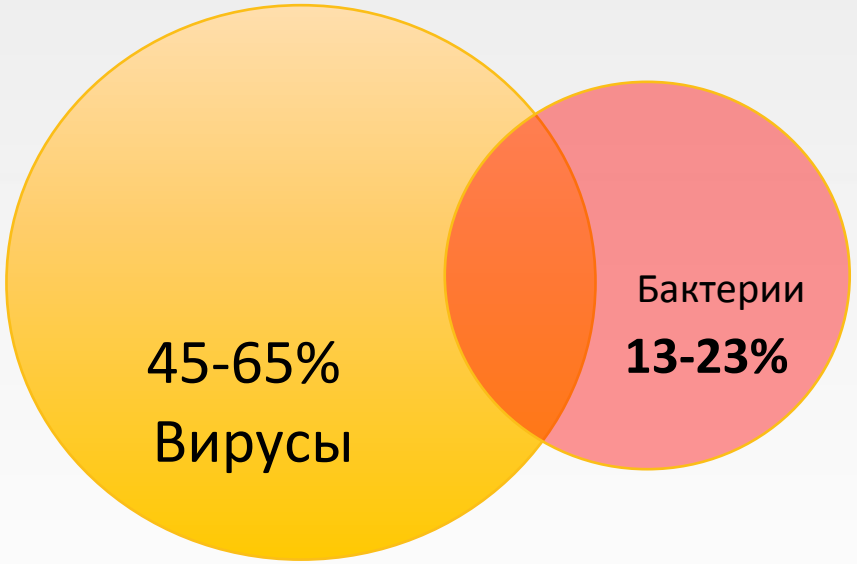
Вирусы гриппа А и В – 10 – 35%,
парагриппозные вирусы (4 типа) – 12-15%,
респираторно-синцитиальная инфекция - 8-10%,
аденовирусы (более 30 типов) – 10-24%,
риновирусы 15-43%,

коронавирусы - 3-5%
энтеровирусы - 5-15%,
реовирусы - 1-3%.

Данные МЗ РБ, 2014

Year : 2013 | **Volume** : 5 | **Issue** : 1 | **Page** : 8-14

Profiling acute respiratory tract infections



VIRIOM

Jartti T, Jartti L, Peltola V, Waris M, Ruuskanen O (2008) Identification of respiratory viruses in asymptomatic subjects: Asymp
Infect Dis J 27(12):1103–1107.

До 68% в респираторных образцах от бессимптомных детей были обнаружены респираторные вирусы

22 исследования, 3 Кокрановских обзора

Year	Season[a]	Number[b]	Age	Risk Group	Viral F								
					n (%)								
					Picorn								
					HRV								
2011 [67]	Autumn, winter, spring	66	6 m–3 y	Healthy	28 (42								
2011 [99]	All year	34	<1 y	Healthy	8 (24%								
		51	1–4 y	Healthy	7 (14%)								
		69	5–19 y	Healthy	9 (13%)								
2011 [95]	Winter	30	<1 y	Healthy	6 (18%)	0 (0%)	1 (3%)	3 (9%)	2 (6%)	0 (0%)	6 (18%)	2 (6%)	0 (0%)
		23	1–2 y	Healthy	4 (16%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (8%)	0 (0%)	0 (0%)
		97	2–6 y	Healthy	14 (15%)	1 (1%)	0 (0%)	2 (2%)	1 (1%)	0 (0%)	3 (3%)	3 (3%)	0 (0%)
2010 [68]	All year	570	<2 y	Healthy	94 (17%)		20 (3.5%)		3 (0.5%)	0 (0%)	8 (3.6%)	3 (0.6%)	4 (1.8%)
		436	<2 y	At risk	103 (24%)		37 (8.5%)		2 (0.5%)	3 (1.8%)	6 (3.5%)	2 (0.5%)	3 (1.8%)
2010 [98]	Autumn, winter	272	<3 y	Rural					3 (1.1%)	1 (0.4%)		2 (0.7%)	5 (1.8%)
2010 [97]	All year	57	<12 y	Rural					2 (4%)				
2010 [100]	All year	425	<3 y	At risk	140 (33%)		68 (16%)		18 (4%)	29 (7%)	15 (4%)	3 (1%)	13 (3%)
2009 [101]	Autumn, winter, spring	65	<7 y	Healthy	14 (22%)	2 (3%)	0 (0%)		0 (0%)	0 (0%)	5 (8%)	0 (0%)	
2008 [102]	All year	116	<14 y	Healthy	11 (9.5%)		5 (4.3%)	2 (1.7%)	1 (0.8%)	1 (0·8%)	0 (0%)	0 (0%)	0 (0%)
2008 [112]	Autumn, winter, spring	100	≤3 y	Healthy				43 (43%)					
2007 [103]	Autumn, winter, spring	269	1.5–9.3 y	Healthy	29 (11%				2 (1%)		2 (1%)	1 (0%)	1 (0%)
2006 [96]	All year	456	<1 y	High risk of atopy	52 (11%								
2006 [104]	All year[c]	410	1–9 y	Healthy	37 (9%								
2004 [94]	NS	70	5 m	Healthy	12 (17%								
		64	1 y	Healthy	18 (28%								
		38	1.5 y	Healthy	10 (26%								
		49	2 y	Healthy	7 (14%								

[a]Related to geographical area.
[b]Number of samples tested.
[c]Stratified for season.
[d]Picornavirus general.
M, months of age; Y, years of age; HRV, human rhinoviruses; EV, entero viruses; AdV, adeno viruses; HBoV, H
viruses; PIV, para-influenza viruses; NS, not specified.
doi:10.1371/journal.ppat.1003057.t002

В 27% случаев от бессимптомных здоровых детей выделено несколько респираторных вирусов в носоглотке в любой момент времени

Вирусные ассоциации
RSV – bocavirus
Риновирус - аденовирус

В 94% случаев бессимптомного вирусоносительства были обнаружены колонизирующие бактерии. Чаще всего *M. catarrhalis* and *H. influenzae*

Грипп А и множественные инфекции с другими респираторными вирусами и риск госпитализации и смертности

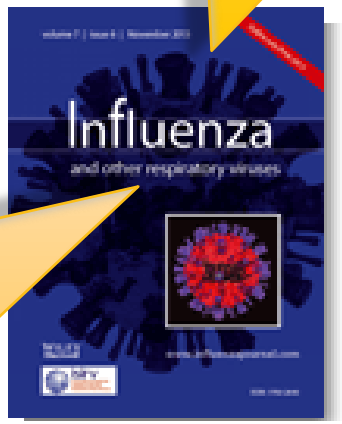
Influenza A viruses dual and multiple infections respiratory viruses and risk of hospitalisation and mortality

Edward Goka[1], Pamela Vallely[2], Kenneth Mutton[1,2] and Paul Klapper[1,2]

Article first published online: 19 OCT 2012

DO

Issue



Influenza and Other Respiratory Viruses

Volume 7, Issue 6, pages 1079–1087, November 2013

Ко-инфекция Грипп А и PCB и AdV

в 3,3 раза увеличивает риск госпитализации с необходимостью интенсивной тепапии

Ургентная комбинация респираторных вирусов

http://onlinelibrary.wiley.com/doi/10.1111/irv.12020/abstract

Nature Reviews Immunology **14**, 827–835 (2014)
Published online 25 November 2014

nature REV

Микробиом дистальных отделов респираторного тракта (более 80 бактериальных геномов).

Host–microorganism interactions in lung diseas

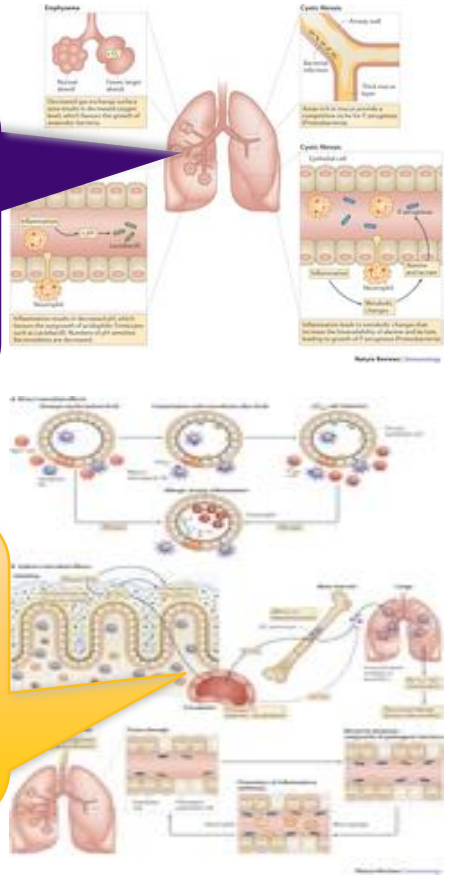
Benjamin

Affiliation

Nature Rev

Published online 25 November 2014

…дисбактериоз микробиоты дыхательных путей может лежать в основе восприимчивости (прогрессирования) и хронизации заболеваний легких.



Nature Reviews Immunology **14**, 827–835 (2014)
Published online 25 November 2014

nature REVIEWS IMMU

- Всего в ТБД идентифицировано более 1000 бактериальных геномов.
- Паттерны-микробиоты хроническ. респираторной патологии

Host–microorganism interactions in lung diseases

Benjamin J. Marsland & Eva S. Gollwitzer

Affiliations | **Corresponding author**

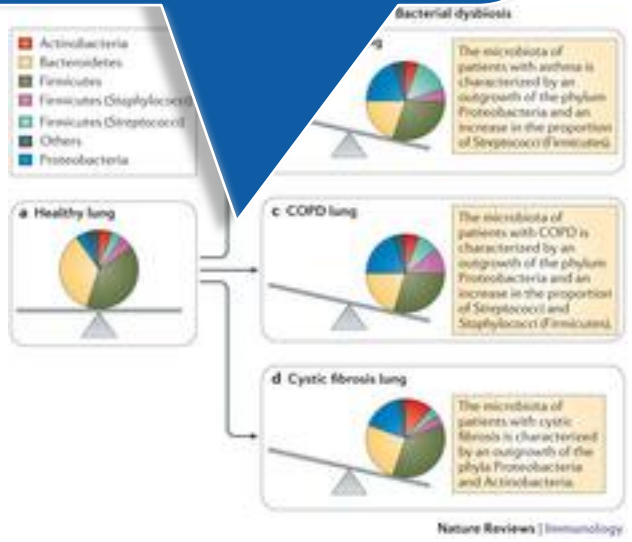
Nature Reviews Immunology **14**, 827–835 (2014) | doi:10.1038/nri3769

Published online 25 November 2014

outline how host–microorganism interactions in the lungs and other tissues might influence respiratory health and disease.

The respiratory tract has a surface area of approximately 75 m^2 and is directly exposed to the environment. In fact, topographically, the airways are external to our body, and thus are a primary site of exposure to environmental microorganisms. Until recently, however, maturation and disease development. This is similar to the approach that has been taken for many years in intestinal research and we believe that similar principles will be shown to apply to host–microorganism relationships in the lungs as in the gut. Indeed, immu-

range from 4.5 log copy numbers per ml[15] to 8.25 log copy numbers per ml[1] in the bronchoalveolar lavage fluid, whereas lung tissue samples show between 10 and 100 bacterial cells per 1,000 human cells[4]. The healthy lung microbiota is thought to be diverse, and a recent study indicated that the airway microbiota reaches a greater diversity more rapidly than the intestinal microbiota following birth[16]. The



Hardin G (1960) The competitive exclusion principle. Science 131(3409):1292–1297.

Garrett Hardin (1986)

parameters have values typical of, say, any warm, moist air mass found in spring and summer in the central United States, with a single exception, a quantity K called *circulation*, which is a measure of the general rotation of the air in which the tornado is imbedded. This quantity has been estimated with great accuracy for at least one tornado, and I think we know very closely its value in the typical case. It corresponds, however, to so great a rotation that it is obviously a very rare occurrence. This may explain the infrequency of tornadoes. It is possible that we could learn to predict this (parent) small-scale cyclone, and this in turn could lead to better forecasting of tornadoes.

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1. H. Lamb, *Hydrodynamics* (Dover, New York, 1932).
2. S. Goldstein, *Modern Developments in Fluid Dynamics* (Oxford Univ. Press, New York, 1938).
3. H. R. Byers, *General Meteorology* (McGraw-Hill, New York, 1959), p. 201.
4. R. S. Scorer, *Natural Aerodynamics* (Pergamon, London, 1958), chap. 7.
5. R. R. Long, *Mechanics of Solids and Fluids* (Prentice Hall, New York, in press).
6. H. Schlichting, *Boundary Layer Theory* (McGraw-Hill, New York, 1955), p. 51.
7. A. A. Townsend, *The ... Shear Flow* (Cam... York, 1956).
8. H. Rouse, "M... logical research ... ology (Wavert... 1249.
9. R. R. Long, ...
10. R. R. Long, "... over the Sierr... *Memorial Vo...* Press, New Y...
11. H. Klieforth, "... Sierra wave,"
12. E. M. Brool... phenomena,"
13. R. R. Long, "... ology, (Wave... *search Tech.* ... 248(31) (1960).

The Competitive Exclusion Principle

An idea that took a century to be born has implications in ecology, economics, and genetics.

Garrett Hardin

On 21 March 1944 the British Ecological Society devoted a symposium to the ecology of closely allied species. There were about 60 members and guests present. In the words of an anonymous reporter (*1*), "a lively discussion . . . centred about Gause's contention (1934) that two species with similar ecology cannot live together in the same place. . . . A distinct cleavage of opinion revealed itself on the question of the validity of Gause's concept. Of the main speakers, Mr. Lack, Mr. Elton and Dr. Varley supported the postulate. . . . Capt. Di... vigorous attack on Gause's conce... on the grounds that the mathematical and experimental approaches had been dangerously over simplified. . . . Pointing out the difficulty of defining 'similar ecology' he gave examples of many congruent species of both plants and animals apparently living and feeding together."

Thus was born what has since been called "Gause's principle." I say "born" rather than "conceived" in order to draw an analogy with the process of mammalian reproduction, where the moment of birth, of exposure to the external world, of becoming a fully legal entity, takes place long after the moment of conception. With respect to the principle here discussed, the length of the gestation period is a matter of controversy: 10 years, 12 years, 18 years, 40 years, or about 100 years, depending on whom one takes to be the father of the child.

Statement of the Principle

... introduced ... tive exclusion princi... ly, the "exclusion principle. ... briefly stated thus: *Complete compe... tors cannot coexist.* Many published discussions of the principle revolve around the ambiguity of the words used in stating it. The statement given above has been very carefully constructed: every one of the four words is ambiguous. This formulation has

... principle. For th... "threat of clarity" ... that is best minimized by using a formulation that is *admittedly* unclear; thus can we keep in the forefront of our minds the unfinished work before us. The wording given has, I think, another point of superiority in that it seems brutal and dogmatic. By emphasizing the very aspects that might result in our denial of them were they less plain... explici... we s... not... mig... son... con... me... nor... san... the... sen... pat... san... if... lea... be... stat...

... University... leta. This ... nial lecture given ... History of Medical Science of Los Angeles on 24 November 1959.

«Принцип конкурентного вытеснения»

... микроорганизмы не могут колонизировать ту же экологическую нишу за счет конкурентного подавления одним другого

Фото из en.wikipedia.org/wiki/Garrett_Hardin

«Межличностная коммуникация» вирусов и бактерий

Производство перекиси водорода H_2O_2 устраняет конкурентов

Нейтрофил (комплимент)-опосредованные убийства «конкурентов»

«Совместное» производство компонентов наружной мембраны, инактивация комплемента C3

Конкурентное ингибирование фосфорилхолина (PhC), сиаловой кислоты (SA)

PLOS | PATHOGENS

Bacterial–bacterial interactions.

Bosch AATM, Biesbroek G, Trzcinski K, Sanders EAM, Bogaert D (2013) Viral and Bacterial Interactions in the Respiratory Tract. PLoS Pathog 9(1): e1003057.

Вирусно-бактериальных взаимодействие на дыхательной поверхности респираторного эпителия

Вирусы стимулируют регуляц… рецептор… для бактер… колонизац… повер…

Вирусы стимулируют регуляцию различных рецепторов, необходимых для бактериальной адгезии, **колонизацию** и репликацию

Вирусы стимулируют регуляцию различных рецепторов, необходимых для бактериальной адгезии, колонизацию, **репликацию и транслокацию**

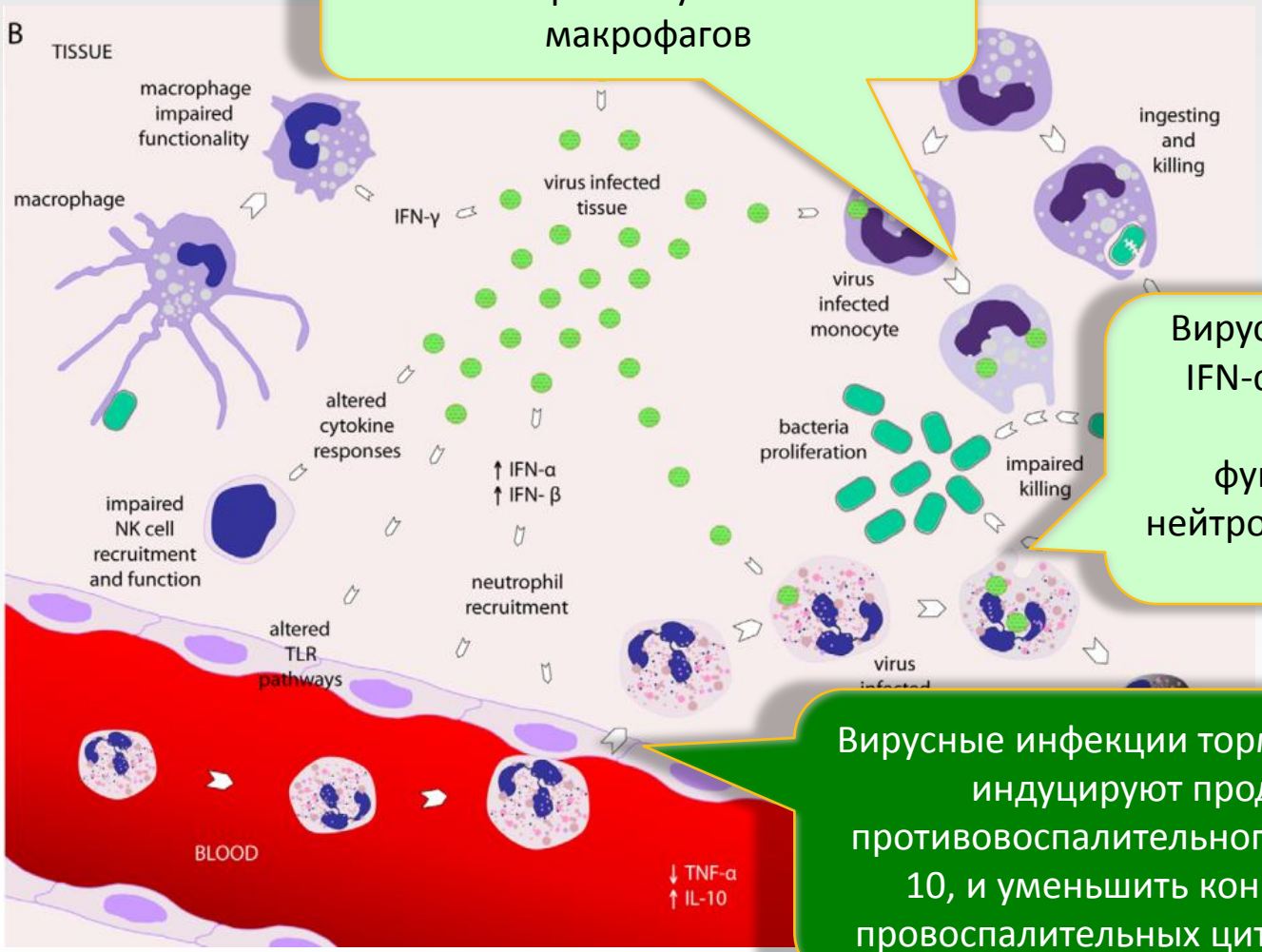
…ю кислоту, предоставляя доступ к бактериальным рецепторам

Viral–bacterial interactions.

Bosch AATM, Biesbroek G, Trzcinski K, Sanders EAM, Bogaert D (2013) Viral and Bacterial Interactions in the Respiratory Tract. PLoS Pathog 9(1): e1003057.

Патогенетические механизмы вирусно-бактериальных респираторных инфекций

IFN-γ негативно влияет на антибактериальную активность макрофагов



Вирус-индуцированные IFN-α и IFN-β снижают активацию и функциональность нейтрофилов и приводят к их апаптозу

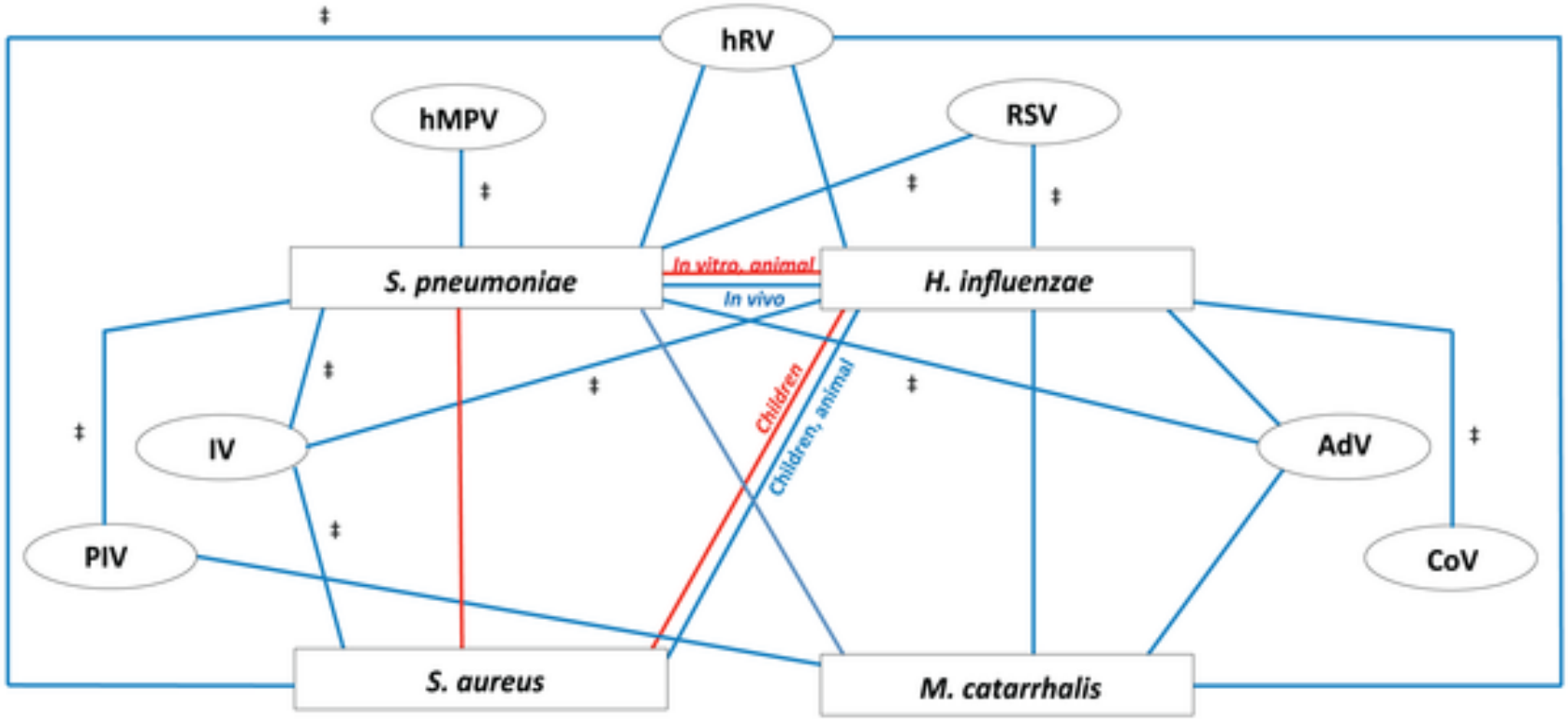
Вирусные инфекции тормозят TLR пути, индуцируют продукцию противовоспалительного цитокина IL-10, и уменьшить концентрацию провоспалительных цитокинов TNF-α

PLOS | PATHOGENS

Viral–bacterial interactions.

Bosch AATM, Biesbroek G, Trzcinski K, Sanders EAM, Bogaert D (2013) Viral and Bacterial Interactions in the Respiratory Tract. PLoS Pathog 9(1): e1003057.

Модель взаимодействия вирусных и бактериальных инфекций (синергизм, антагонизм)

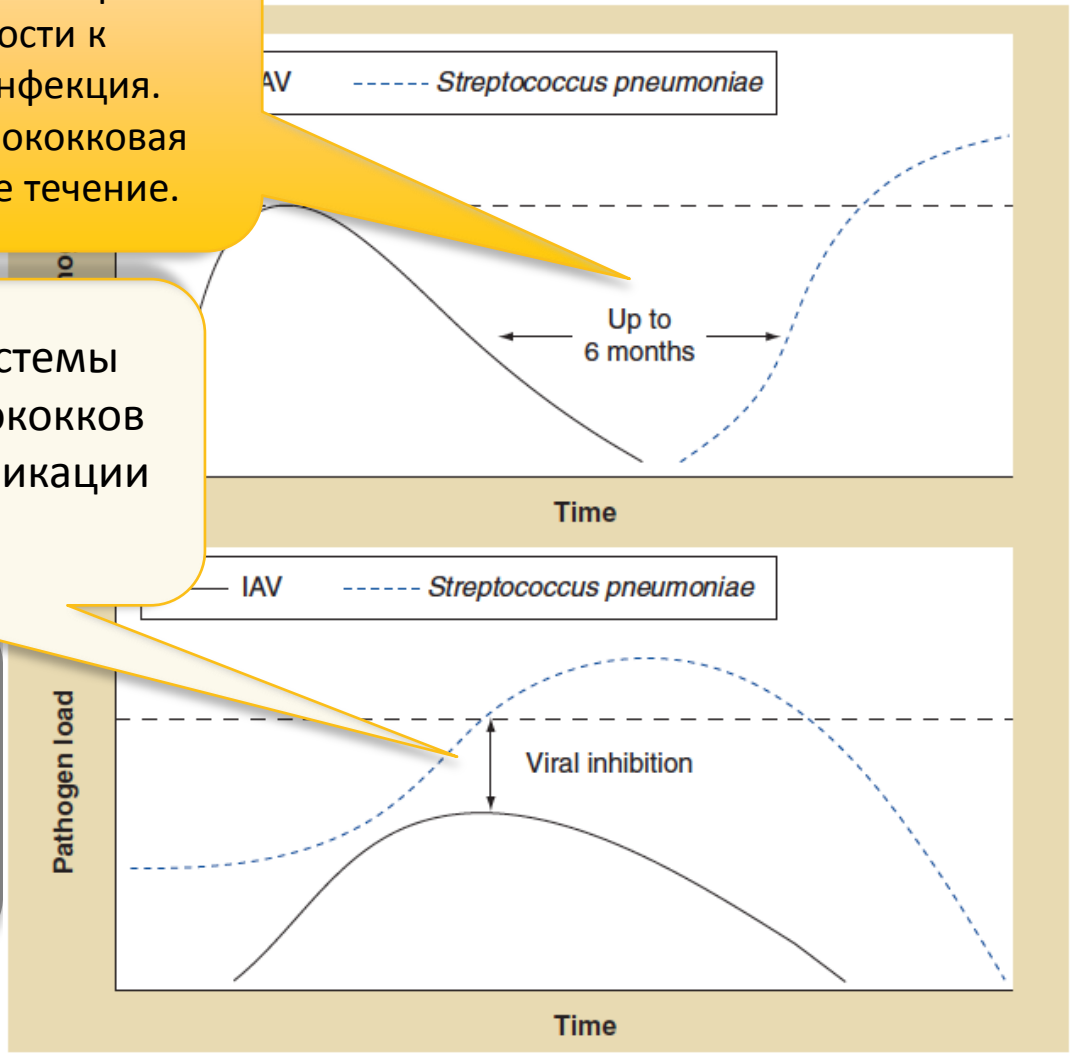


Bosch AATM, Biesbroek G, Trzcinski K, Sanders EAM, Bogaert D (2013) Viral and Bacterial Interactions in the Upper Respiratory Tract. PLoS Pathog 9(1): e1003057.

Первичное инфицирование вирусом гриппа создает окно восприимчивости к вторичной пневмококковой инфекция. **У детей** пост-гриппозная пневмококковая инфекция приобретает тяжелое течение.

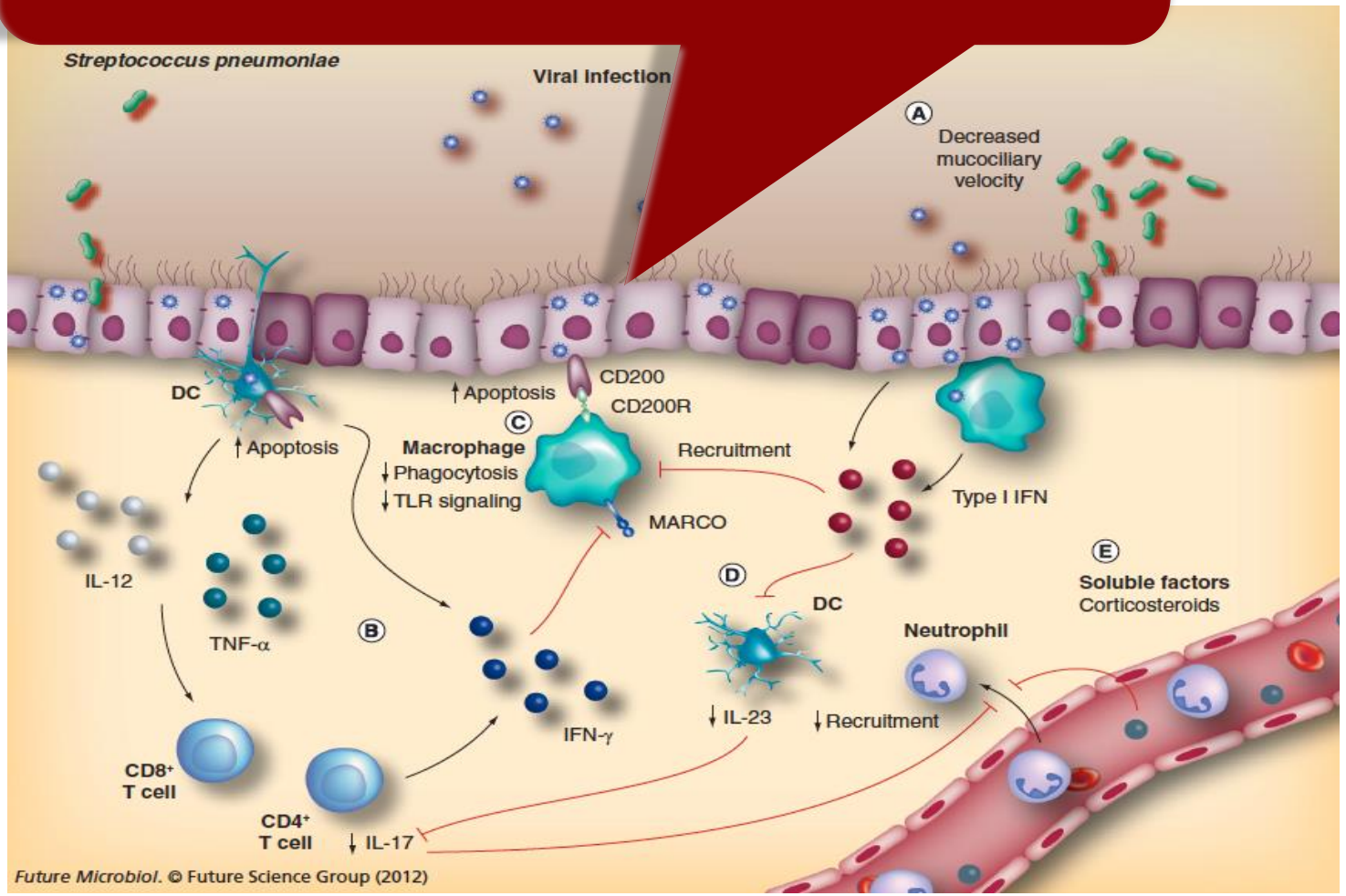
Стимуляция иммунной системы путем колонизации пневмококков может препятствовать репликации вируса.

Взаимодействие между пневмококком и вирусом гриппа: взаимо-выгодные отношения?

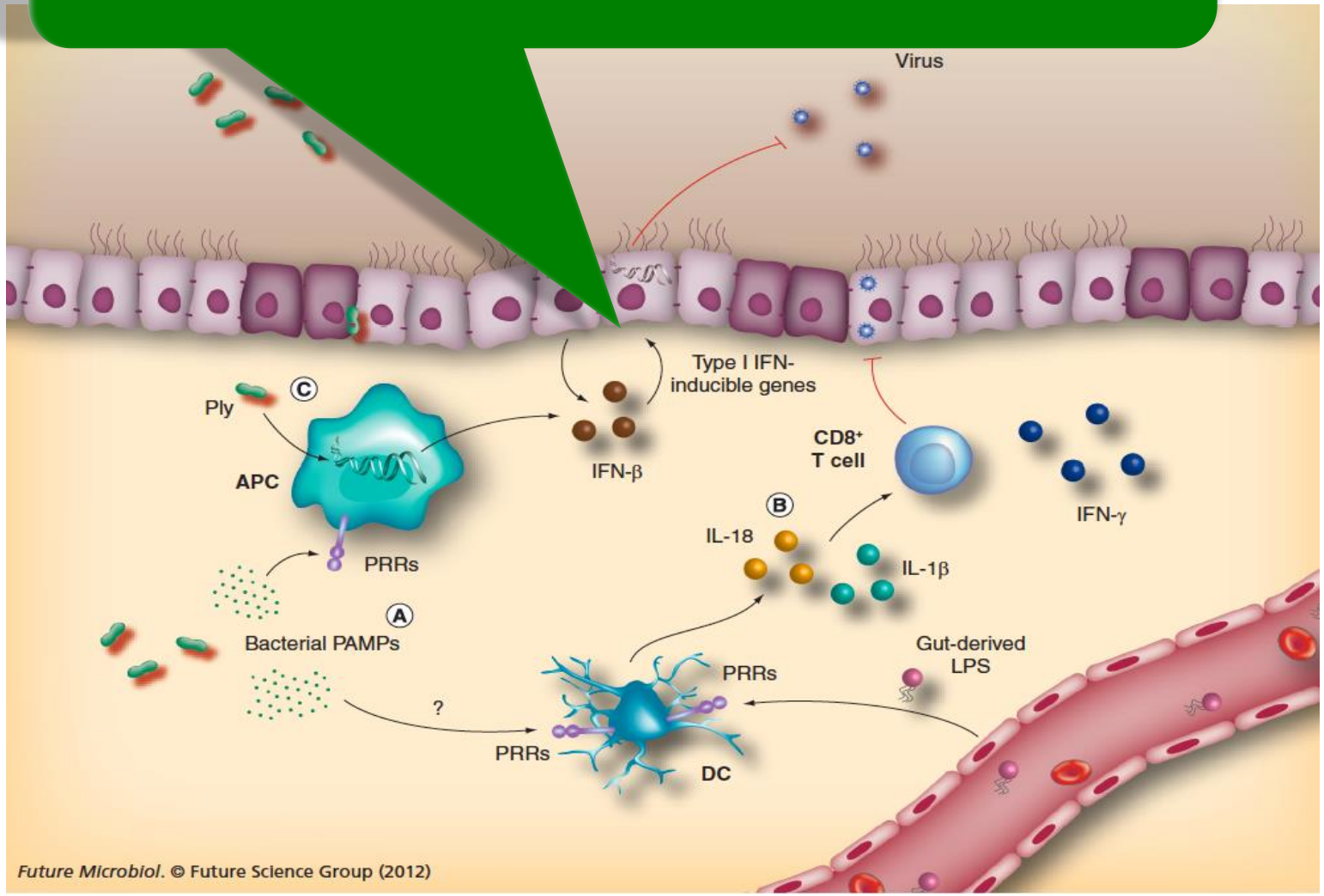


Kirsty R Short *Future Microbiol.* (2012), **7**(5), 609–624

Апоптоз иммунных клеток увеличивает экспрессию CD200, что приводит к устойчивой десенсибилизации к бактериальным раздражителям, активации интерферонов эпителиальных клеток и ингибированию PMNs и макрофагов через Ил-23-ИЛ-17



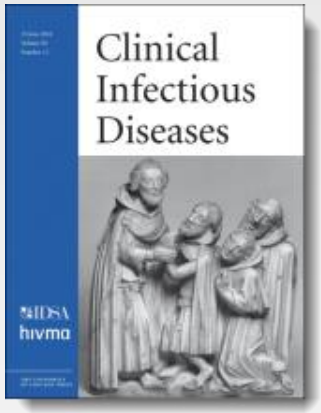
Во время колонизации, аутолиза пневмококка происходит активация IL-1b и IL-18, стимуляция Т-клеточных ответов и производство IFN

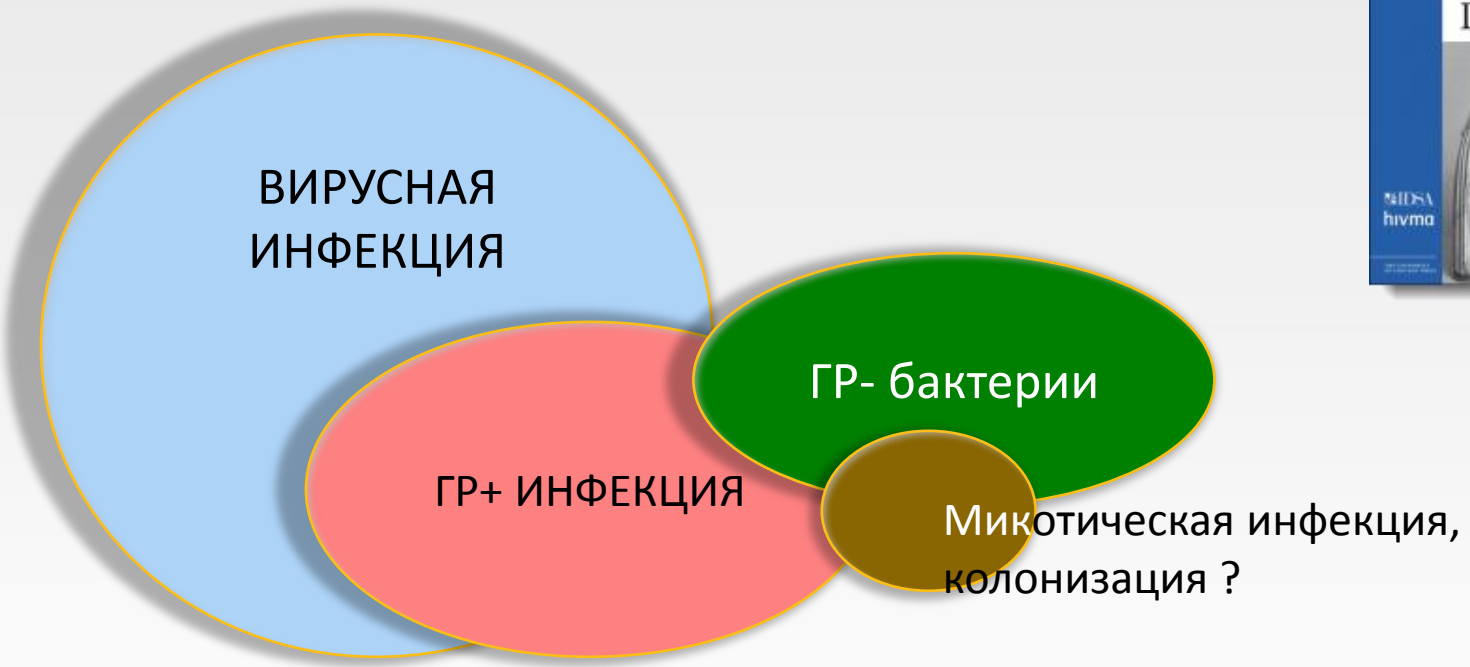


Kirsty R Short *Future Microbiol.* (2012), **7**(5), 609–624

Shulman ST, Bisno AL, Clegg HW, et al: Clin Infect Dis; Epub 2012 Sep 9.

Dynamic viral upper respiratory infection

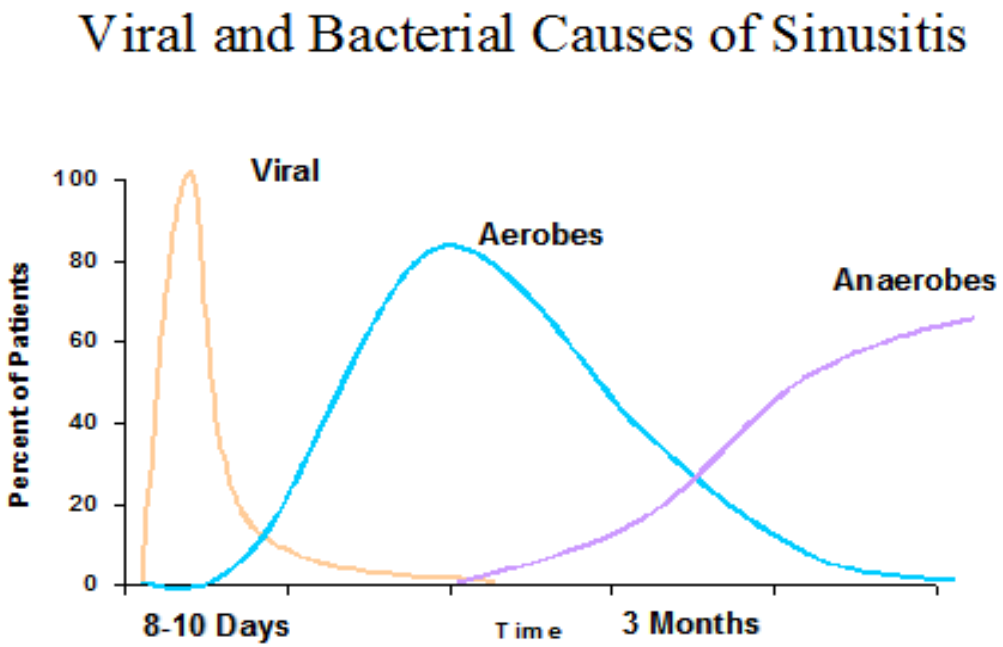




БАКТЕРИАЛЬНЫЙ МАРШ

Implementation Science 2007, 2:26
doi:10.1186/1748-5908-2-26

Эволюция инфекционного синусита



Kentigern Thorbur

Легочная бактериальная ко-

Expert Rev. Anti I 912 nfect. Ther. 10(8), (2012)

Table 1. Studies reporting pulmonary bacterial coinfection in infants and children.

Study (year)	Study period/ study design	Study group (country)	Patients studied for coinfection[†]	Coinfection incidence (bacteriology method)	Viral pathogen(s) (in entire study group)	Coinfection bacteria	Ref.
Michelow *et al.* (2004)	1999–2000/ prospective	Hospitalized for community-acquired pneumonia (USA)	154	23% (sputum – bacterial culture or serology – direct fluorescent antibody)	Viruses in mixed coinfection group: influenza A 16, influenza B 6, parainfluenza 1–3 12, RSV 11, adenovirus 9, rhinovirus 2, enterovirus 1	*Streptococcus pneumoniae* 12, *Streptococcus pyogenes* 2, *Staphylococcus aureus* 2, *Staphylococcus milleri* 1, *Chlamydia pneumoniae* 7, *Mycoplasma pneumoniae* 6, *Mycobacterium tuberculosis* 1	[11]
Resch *et al.* (2007)	2001–2005/ retrospective	Hospitalized with RSV bronchiolitis (Austria)	428	1% (tracheal smears – bacterial culture)	RSV 428	*Haemophilus influenzae* 1, *S. aureus* 1, *Streptococcus* spp. 1, *Haemophilus hemolyticus* 1	[15]
Nascimento-Carvalho *et al.* (2008)	2003–2005/ prospective	Hospitalized for community-acquired pneumonia (Brazil)	184	28% (serology – direct fluorescent antibody or PCR)	Rhinovirus 21%, parainfluenza 1–3 17%, RSV 15%, influenza A + B 9%, enterovirus 5%, adenovirus 3%	Bacteria in whole study group: *S. pneumoniae* 21%, *H. influenzae* 8%, *M. pneumoniae* 8%, *Chlamydia trachomatis* 4%, *Moraxella catarrhalis* 3%, *C. pneumoniae* 1%	[19]
Hishiki *et al.* (2011)	2005–2007/ prospective	Hospitalized with RSV bronchiolitis (Japan)	188	44% (sputum – bacterial culture)	RSV 188	*H. influenzae* 36, *S. pneumoniae* 30, *M. catarrhalis* 24, two bacteria 10	[12]
Reed *et al.* (2009)	2006–2007/ retrospective	Hospitalized with influenza infection (USA)	67	% (respiratory 70% + 0% – bacterial	Influenza A 25, influenza B 29, influenza not typed 11	*S. aureus* 7 (MRSA 4 of 7), *Pseudomonas* 2, *H. influenzae* 1, *S. pyogenes* 1, *Klebsiella* 1, *Alicaligenes xylosoxidans* 1	[33]
Randolph *et al.* (2004)	1990–2002/ retrospective	'Previously healthy' infants admitted to PICU with RSV infection (USA)	47		RSV 47	*M. catarrhalis*, *H. influenzae*, *S. pneumoniae*	[7]
van Woensel *et al.* (2001)	1992–2000/ retrospective	Admitted to PI with RSV bronchiolitis (T Netherlands)					
Kneyber *et al.* (2005)	1996–2001/ retrospective	Ventilated with bronchiolitis (T Netherlands)					

[†]Number of patients in the study in whom pulmonary bacte
BAL: Bronchoalveolar lavage sample; CONS: Coagulase-neg

Бактериальная ко-инфекция у госпитализированных наблюдалась в 17-39% и характерна для гриппа и РСВ.

Значимы вопросы инфекционного контроля

nature REVIEWS MICROBIOLOGY

The Pediatric Infectious Disease Journal

An official publication of the European Society for Paediatric Infectious Diseases

Nature Reviews Microbiology **7**, 887-894 (December 2009)

What are the consequences of the disappearing human microbiota?

Martin J. Blaser & Stanley Falkow

Каковы последствия нарушения микрофлоры человека?

Microbial Interactions in the Respiratory Trac

Murphy, Timothy F. MD*†; Bakaletz, Lauren O. MD, PhD‡§; Smeesters

Pediatric Infectious Disease Journal:
October 2009 - Volume 28 - Issue 10 - pp S121-S126
doi: 10.1097/INF.0b013e3181b6d7ec
Supplement

Микробные взаимодействия в респираторном тракте

«Индуцированный дисбаланс в респираторном микробиоме способствует появлению нового бактериального или вирусного возбудителя, трансмиссии нескольких потенциальных патогенных бактерий или вирусной ко-инфекции…»

Двунаправленный Синергизм

Sajjan US, Jia Y, Newcomb DC, Bentley JK, Lukacs NW, et al. (2006) potentiates airway epithelial cell responses to rhinovirus by increasing expression. FASEB J 20(12):2121–2123

H. Influenzae стимулирует экспрессию ICAM-1 и TLR3 на респираторном эпителии, способствуя развитию риновирусной инфекции

Microbiol Infect 17(12):1840–1844

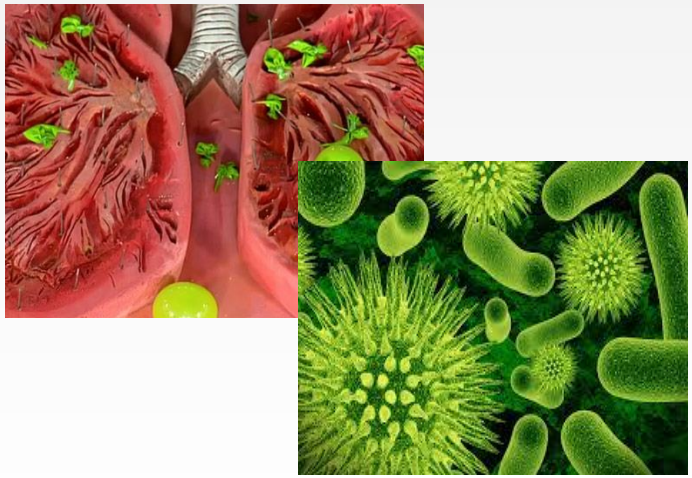
Пневмококк существенно повышает восприимчивость респираторного эпителия к человеческому метапневмовирусу

Трансмиссия вирусом на 54% эффективнее если микробиота разбалансирована антибиотиками.

Теории взаимоотношений ВИРУСЫ - БАКТЕРИИ

«ОТ ВИРУСА К БАКТЕРИИ»

«Вирусы «вспахивают» и истощают клеточный иммунитет приводя к бактериальной контаминации и бактериальной патологии…» *



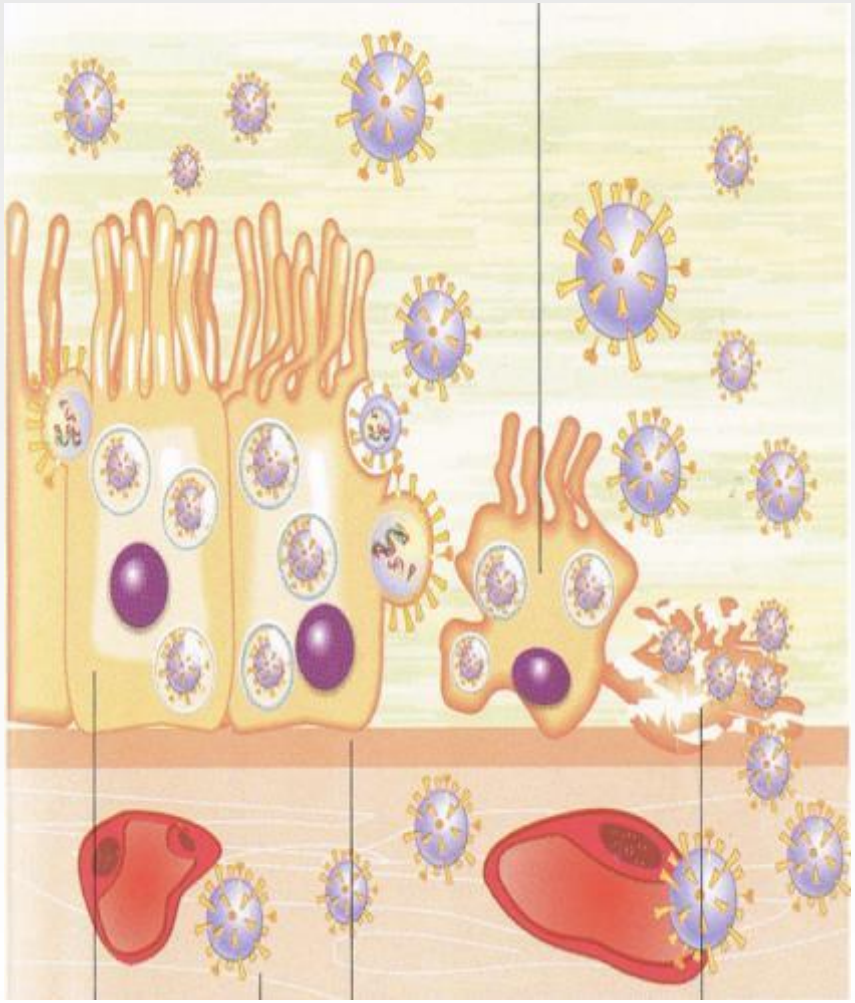
*V. Palladie

«ВИРУС + АБП = БАКТЕРИИ»

Теория дисмикробизма. Развитие дисбиоза на фоне антибиотикотерапии с последующим развитием бактериальной патологии **

**T. F. Murphy

* Клинические проявления ОРИ зависят от:



- **Вирулентности вируса.**
- **Тропности к определенным участкам слизистой, морфологическим элементам.**
- **Ко-инфекции**
- **Места внедрения.**
- **Реактивности организма.**
- **Скорости элиминации.**
- **Лечения.**
- **Вакцинации.**

* Floyd W. Denny, 2011

Клиническое течение острой вирусной респираторной патологии

Floyd W. Denny, Jr. **"The Clinical Impact of Human Respiratory Virus Infections"**, American Journal of Respiratory and Critical Care Medicine, Vol. 152, No. 42 (5), pp. S4-S12.

Jeffrey J VanWormer, Maria E Sundaram, Jennifer K Meece and Edward A Belong «**A cross-sectional analysis of symptom severity in adults with influenza and other acute respiratory illness in the outpatient setting»**. BMC Infectious Diseases 14, 231/Jan-2014

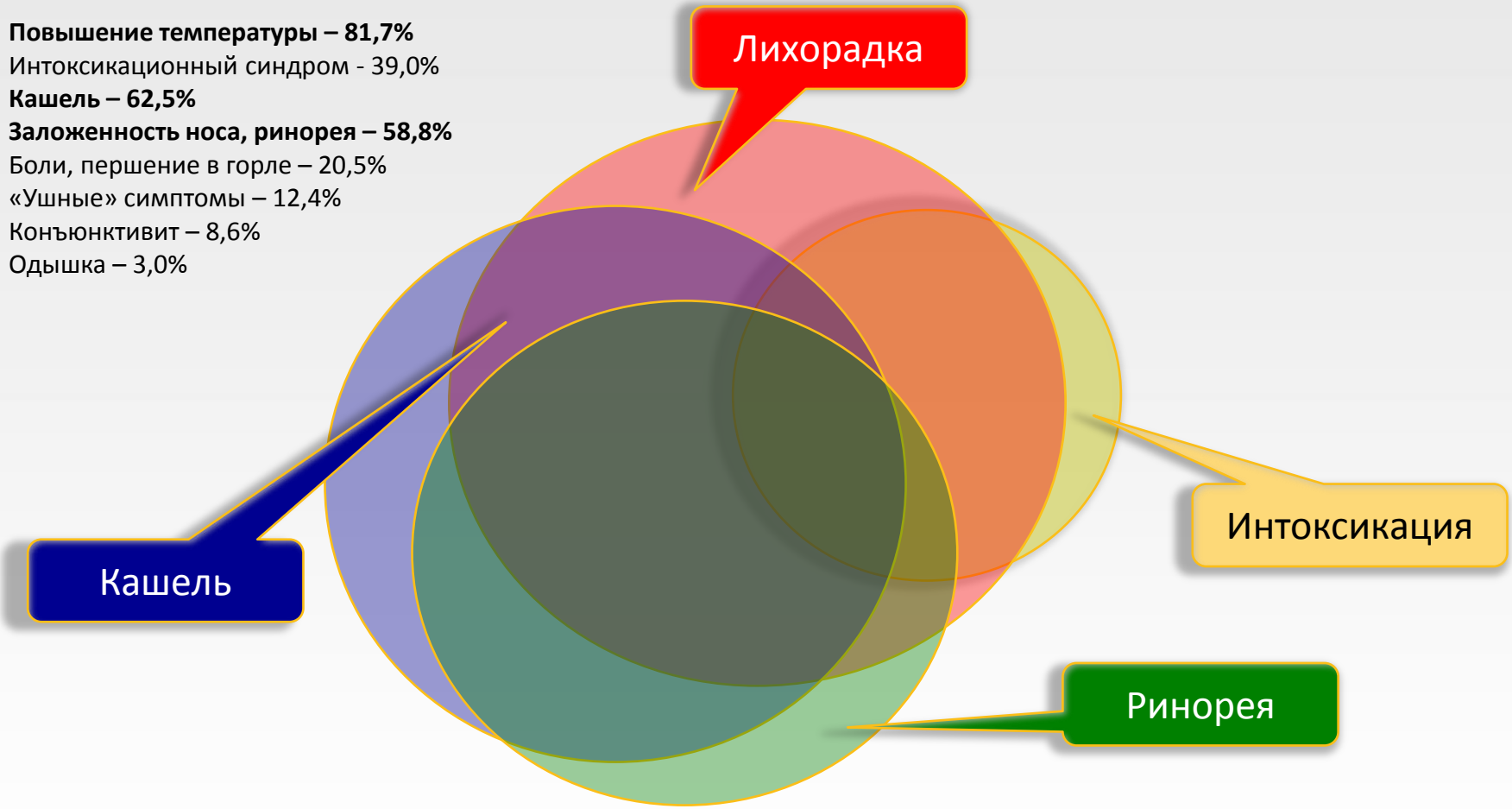
Heikkinen T, Jarvinen A: **The common cold.** Lancet 2003, 361:51-59

Widmer K, Zhu Y, Williams JV, Griffin MR, Edwards KM, Talbot HK: **Rates of hospitalizations for respiratory syncytial virus, human metapneumovirus, and influenza virus in older adults.** J Infect Dis 2012, 206(1):56-62

Turner RB: **Epidemiology, pathogenesis, and treatment of the common cold.** Ann Allergy Asthma Immunol 2007, 78:531-539.

Клинические паттерны ОРИ

Повышение температуры – 81,7%
Интоксикационный синдром - 39,0%
Кашель – 62,5%
Заложенность носа, ринорея – 58,8%
Боли, першение в горле – 20,5%
«Ушные» симптомы – 12,4%
Конъюнктивит – 8,6%
Одышка – 3,0%



Модифицировано по Berdman S., 2008

Zimmerman et al. BMC Infectious Diseases (2015) 15:87.

Influenza and other respiratory virus infections in outpatients with medically attended ARI

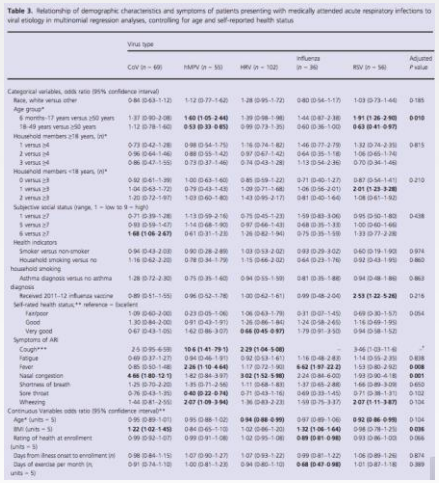
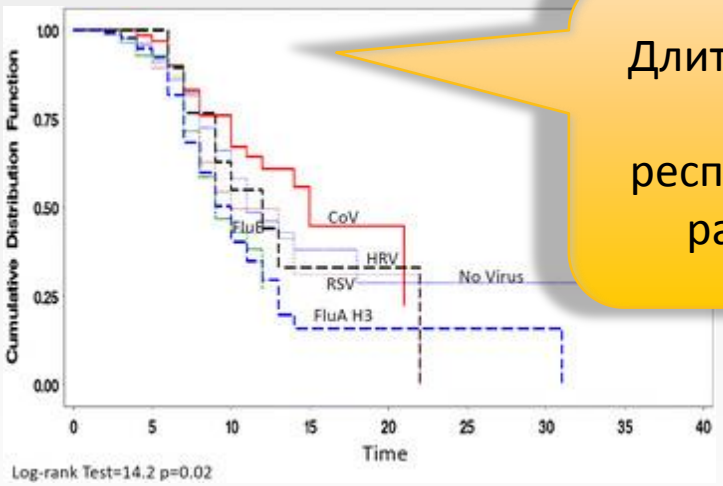


Table 3. Relationship of demographic characteristics and symptoms of patients presenting with medically attended acute respiratory infections to viral etiology in multinomial regression analyses, controlling for age and self-reported health status

	Virus type					
	CoV (n = 69)	hMPV (n = 55)	HRV (n = 102)	Influenza (n = 96)	RSV (n = 56)	Adjusted P value
Categorical variables, odds ratio (95% confidence interval)						
Race, white versus other	0·84 (0·63–1·12)	1·12 (0·77–1·62)	1·28 (0·95–1·72)	0·80 (0·54–1·17)	1·03 (0·73–1·44)	0·185
Age group*						
6 months–17 years versus ≥50 years	1·37 (0·90–2·08)	**1·60 (1·05–2·44)**	1·39 (0·98–1·98)	1·44 (0·87–2·38)	**1·91 (1·26–2·90)**	**0·010**
18–49 years versus ≥50 years	1·12 (0·78–1·60)	**0·53 (0·33–0·85)**	0·99 (0·73–1·35)	0·60 (0·36–1·00)	**0·63 (0·41–0·97)**	
Household members ≥16 years, (n)*						
1 versus ≥4	0·73 (0·42–1·28)	0·98 (0·54–1·75)	1·16 (0·74–1·82)	1·46 (0·77–2·79)	1·32 (0·74–2·35)	0·815
2 versus ≥4	0·96 (0·64–1·46)	0·88 (0·55–1·42)	0·97 (0·67–1·42)	0·64 (0·35–1·18)	1·06 (0·65–1·74)	
3 versus ≥4	0·86 (0·47–1·55)	0·73 (0·37–1·46)	0·74 (0·43–1·28)	1·13 (0·54–2·36)	0·70 (0·34–1·46)	
Household members <18 years, (n)*						
0 versus ≥3	0·92 (0·61–1·39)	1·00 (0·63–1·60)	0·85 (0·59–1·22)	0·71 (0·40–1·27)	0·87 (0·54–1·41)	0·210
1 versus ≥3	1·04 (0·63–1·72)	0·79 (0·43–1·43)	1·09 (0·71–1·68)	1·06 (0·56–2·01)	**2·01 (1·23–3·28)**	
2 versus ≥3	1·20 (0·72–1·97)	1·03 (0·60–1·80)	1·43 (0·95–2·17)	0·81 (0·40–1·64)	1·08 (0·61–1·92)	
Subjective social status (range, 1 = low to 9 = high)						
1 versus ≥7	0·71 (0·39–1·28)	1·13 (0·59–2·16)	0·75 (0·45–1·23)	1·59 (0·83–3·06)	0·95 (0·50–1·80)	0·438
5 versus ≥7	0·93 (0·59–1·47)	1·14 (0·68–1·90)	0·97 (0·66–1·43)	0·68 (0·35–1·33)	1·00 (0·60–1·66)	
6 versus ≥7	**1·68 (1·06–2·67)**	0·61 (0·31–1·23)	1·26 (0·82–1·94)	0·75 (0·35–1·59)	1·33 (0·77–2·28)	
Health indicators						
Smoker versus non-smoker	0·94 (0·43–2·03)	0·90 (0·28–2·89)	1·03 (0·53–2·02)	0·93 (0·29–3·02)	0·60 (0·19–1·90)	0·974
Household smoking versus no household smoking	1·16 (0·62–2·20)	0·78 (0·34–1·79)	1·15 (0·66–2·02)	0·64 (0·23–1·76)	0·92 (0·43–1·95)	0·860
Asthma diagnosis versus no asthma diagnosis	1·28 (0·72–2·30)	0·75 (0·35–1·60)	0·94 (0·55–1·59)	0·81 (0·35–1·86)	0·94 (0·48–1·86)	0·863
Received 2011–12 influenza vaccine	0·89 (0·51–1·55)	0·96 (0·52–1·78)	1·00 (0·62–1·61)	0·99 (0·48–2·04)	**2·53 (1·22–5·26)**	0·216
Self-rated health status;** reference = Excellent						
Fair/poor	1·09 (0·40–2·98)	0·23 (0·05–1·06)	1·06 (0·43–1·79)	0·31 (0·07–1·45)	0·69 (0·30–1·57)	0·054
Good	1·30 (0·84–2·00)	0·91 (0·43–1·91)	1·26 (0·86–1·84)	1·24 (0·58–2·65)	1·16 (0·69–1·95)	
Very good	0·67 (0·43–1·05)	1·62 (0·86–3·07)	**0·66 (0·45–0·97)**	1·79 (0·91–3·50)	0·94 (0·58–1·52)	
Symptoms of AR						
Cough****	2·5 (0·95–6·59)	**10·6 (1·41–79·1)**	**2·29 (1·04–5·08)**		3·46 (1·03–11·6)	*
Fatigue	0·69 (0·37–1·27)	0·94 (0·46–1·91)	0·92 (0·53–1·61)	1·16 (0·48–2·83)	1·14 (0·55–2·35)	0·838
Fever	0·85 (0·50–1·48)	**2·26 (1·10–4·64)**	1·17 (0·72–1·90)	**4·62 (1·97–22·2)**	1·53 (0·80–2·92)	**0·008**
Nasal congestion	**4·66 (1·80–12·1)**	1·42 (0·84–3·97)	**3·02 (1·52–5·98)**	2·24 (0·84–6·00)	1·93 (0·90–4·18)	**0·001**
Shortness of breath	1·25 (0·70–2·20)	1·35 (0·71–2·56)	1·11 (0·68–1·83)	1·37 (0·65–2·88)	1·66 (0·89–3·09)	0·650
Sore throat	0·76 (0·43–1·35)	**0·40 (0·22–0·74)**	0·71 (0·43–1·16)	0·69 (0·33–1·45)	0·71 (0·38–1·31)	0·102
Wheezing	1·44 (0·81–2·55)	**2·07 (1·09–3·94)**	1·36 (0·83–2·23)	1·69 (0·75–3·37)	**2·07 (1·11–3·87)**	0·104
Continuous Variables odds ratio (95% confidence interval)**						
Age* (units = 5)	0·95 (0·89–1·01)	0·95 (0·88–1·02)	**0·94 (0·88–0·99)**	0·97 (0·89–1·06)	**0·92 (0·86–0·99)**	0·104
BMI (units = 5)	**1·22 (1·02–1·45)**	0·84 (0·65–1·10)	1·02 (0·86–1·20)	**1·32 (1·06–1·64)**	0·98 (0·78–1·25)	**0·036**
Rating of health at enrollment	0·99 (0·92–1·07)	0·99 (0·91–1·08)	1·02 (0·95–1·08)	**0·89 (0·81–0·98)**	0·93 (0·86–1·03)	0·066
(units = 5)						
Days from illness onset to enrollment (n)	0·98 (0·84–1·15)	1·07 (0·90–1·27)	1·07 (0·93–1·22)	0·99 (0·81–1·22)	1·06 (0·89–1·26)	0·874
Days of exercise per month (n, units = 5)	0·91 (0·74–1·10)	1·00 (0·81–1·23)	0·94 (0·80–1·10)	**0·68 (0·47–0·98)**	1·01 (0·87–1·18)	0·389



Длительность клинических проявлений при респираторных инфекциях различной этиологии

Overview

- AAP Releases Practice Guideline on Diagnosis, Management, and Prevention of Bronchiolitis [Practice Guidelines] (04/15/2015)
- AAP Releases Guideline on Diagnosis and Management of Acute Bacterial Sinusitis in Children One to 18 Years of Age [Practice Guidelines] (04/15/2014)
- IDSA Updates Guideline for Managing Group A Streptococcal Pharyngitis [Practice Guidelines] (09/01/2013)
- IDSA Releases Guidelines for Management of Acute Bacterial Rhinosinusitis [Practice Guidelines] (03/15/2013)
- Acute Rhinosinusitis in Adults (05/01/2011)
- Croup: An Overview (05/01/2011)
- Diagnosis and Treatment of Acute Bronchitis (12/01/2010)
- Diagnosis and Treatment of Streptococcal Pharyngitis (03/01/2009)
- Pharyngitis (03/15/2004)
- Diagnosis and Management of Group A Streptococcal Pharyngitis [Practice Guidelines] (02/15/2003)
- Guidelines for the Diagnosis and Management of Rhinosinusitis in Adults [Practice Guidelines] (12/01/2007)

Screening and Diagnosis

- Diagnosis of Streptococcal Pharyngitis [Point-of-Care Guides] (06/15/2014)
- Risk Stratification of Children with Bronchiolitis [Point-of-Care Guides] (08/01/2012)
- Usefulness of Procalcitonin Measurement in Reducing Antibiotic Use and Identifying Serious Bacterial Illness [AFP Journal Club] (07/15/2011)

Prevention

- AAP Updates Guidelines on Immunoprophylaxis for RSV Infection [Practice Guidelines] (09/01/2010)

Treatment

- Bronchodilators for Bronchiolitis [Cochrane for Clinicians] (11/01/2014)
- Intranasal Corticosteroids for Acute Bacterial Sinusitis [Cochrane for Clinicians] (09/01/2014)
- Antibiotics for Sore Throat [Cochrane for Clinicians] (07/01/2014)
- Corticosteroids for the Treatment of Sore Throat [Cochrane for Clinicians] (01/01/2014)
- Treatments for Symptoms of the Common Cold [FPIN's Clinical Inquiries] (12/15/2013)
- Oral Antihistamine/Decongestant/Analgesic Combinations for the Common Cold [Cochrane for Clinicians] (11/01/2012)
- Antibiotic Use in Acute Upper Respiratory Tract Infections (11/01/2012)
- Treatment of the Common Cold in Children and Adults (07/15/2012)
- Common Cold [Clinical Evidence Handbook] (12/15/2011)
- Antibiotics for Viral Upper Respiratory Tract Infections in Children [FPIN's Clinical Inquiries] (03/15/2011)
- Respiratory Syncytial Virus Infection in Children (01/15/2011)
- Saline Nasal Irrigation for Upper Respiratory Conditions (11/15/2009)
- Antibiotics for Acute Maxillary Sinusitis [Cochrane for Clinicians] (05/01/2009)
- Sinusitis (Acute) [Clinical Evidence Handbook] (02/15/2009)
- Radiologic Imaging in the Management of Sinusitis (11/15/2002)
- AAP Issues Recommendations for the Management of Sinusitis in Children [Practice Guidelines] (03/15/2002)
- Bronchitis (Acute) [Clinical Evidence Handbook] (08/01/2004)
- Antihistamines for the Common Cold [Cochrane for Clinicians] (08/01/2004)
- Upper Respiratory Tract Infection [Clinical Evidence Handbook] (12/01/2002)
- Should We Prescribe Antibiotics for Acute Bronchitis? [Cochrane for Clinicians] (07/01/2001)

Editorials and Letters

- Appropriate Antibiotic Use: Family Physicians Have the Power of the Pen [Editorials] (11/01/2012)
- Avoiding Sore Throat Morbidity and Mortality: When Is It Not "Just a Sore Throat?" [Editorials] (01/01/2011)

Критерии антибиотикотерапии ОРИ (бактериальной инфекции)

- **Длительная, более 3 дней лихорадка;**
- Появление слизисто-гнойного отделяемого;
- Одышка без бронхообструкции;
- Асимметрия хрипов;
- Наличие лейкоцитоза, нейтрофилеза со сдвигом влево.

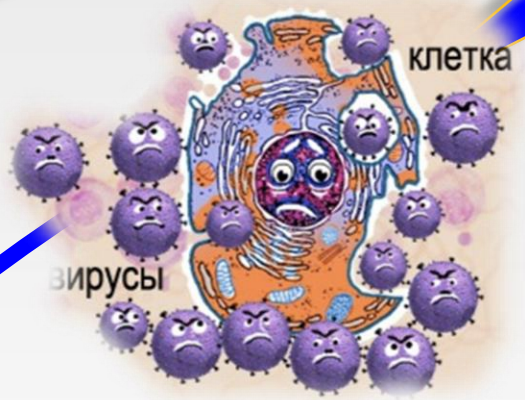
?

Патогенез и симптоматика ОРИ

Инфекционная нагрузка

Лихорадка

Респираторные симптомы



Размножение, персистирование инфекционного агента	Элиминация, гибель возбудителя	Регрессия воспаления, разрешение симптомов, реконвалесценция

Модифицировано по Hottings D., 2005

Этапы течения вирусной респираторной патологии

Адаптировано по K. Thorburn, 2012

РИНО-ВИРУСНАЯ инфекция

Пикорнавирус
100 серотипов

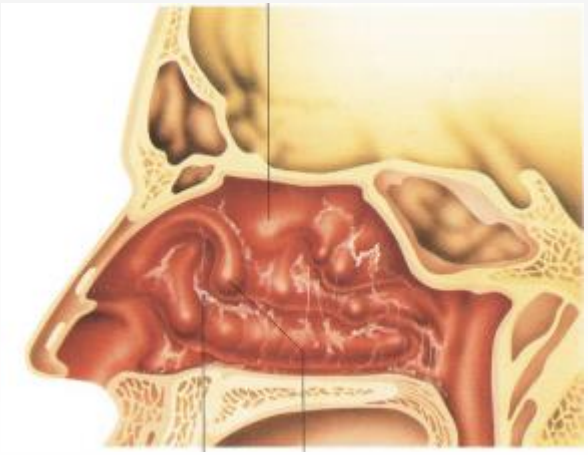
ЛИХОРАДКА – **1-3 дня**, слабовыраженная

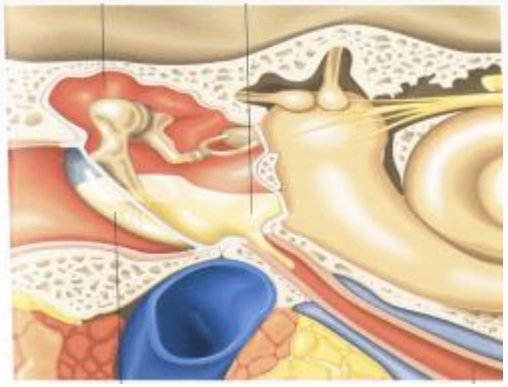
Общая длительность – **5-7 дней**

Осложнения – **синусит, отит**

Floyd W. Denny, Jr., 2012

Клинические проявления - ринит





АДЕНО-ВИРУСНАЯ инфекция

32 типа
в т.ч. PCF*

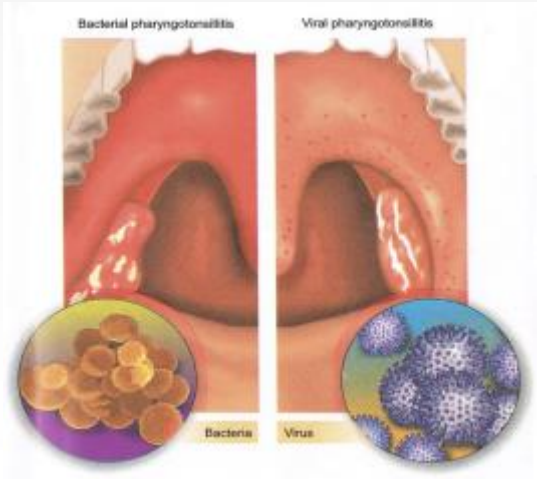
ЛИХОРАДКА – **до 6-14 дней**, выраженная, часто двухволновая

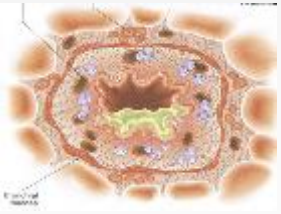
Общая длительность – **до 2-3 недель**

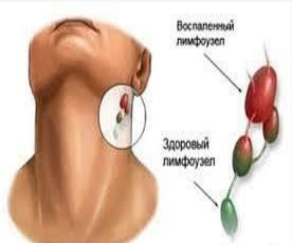
Осложнения – **пневмония**

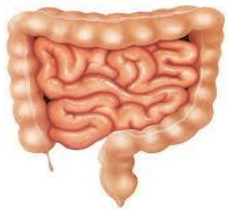
Widmer K, Zhu Y., 202

Клинические проявления – тонзилофарингит, ринит, аденопатия, конъюктивит, энтерит



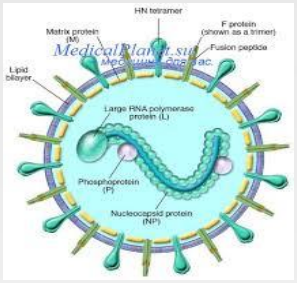






*pharyngoconjunctival fever-PCF — англ.

РЕСПИРАТОРНО-СЕНТИЦИАЛЬНЫЙ вирус

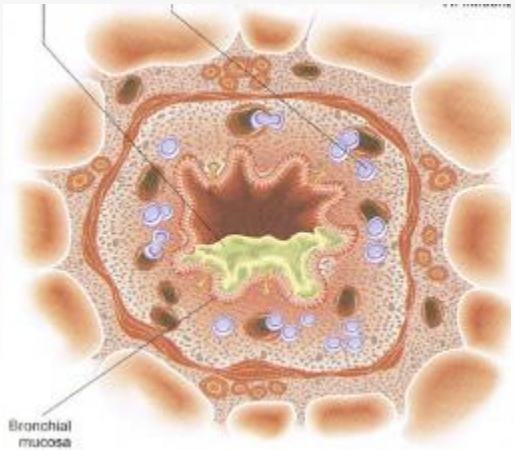


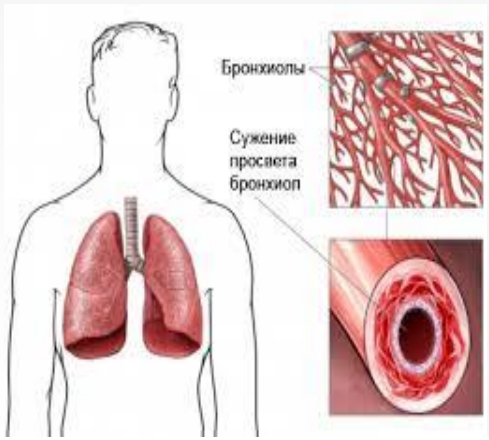
ЛИХОРАДКА – **до 7 дней**, выраженная

Общая длительность – **до 3 недель**

Осложнения – **ДН**

Клинические проявления – обструктивный бронхит, бронхиолит, пневмония

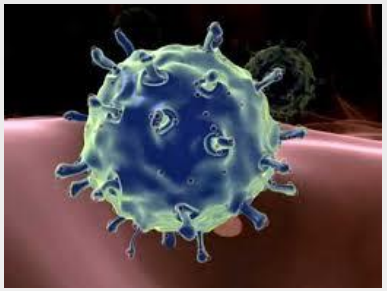




Jeffrey J VanWormer, 2014

ПАРАГРИПП

4 типа вирусов



ЛИХОРАДКА – **4-5 дней**, не выраженная

Общая длительность – **до 2-4 недель**

Осложнения – **«вирусный круп»**

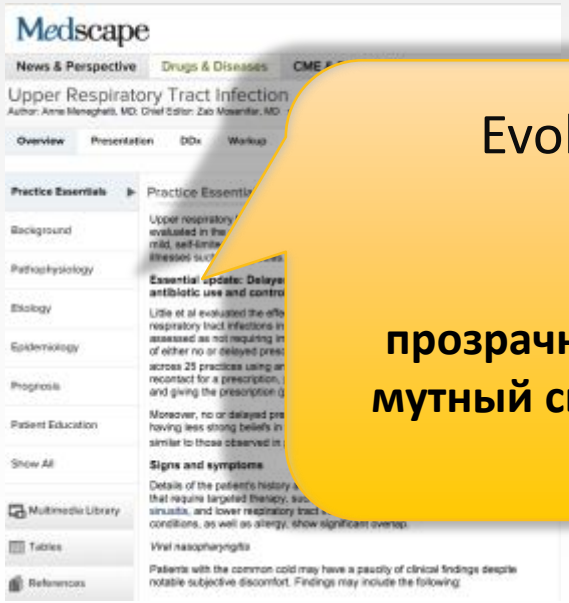
Клиника – рино**-фариного-ларинго-трахеит**

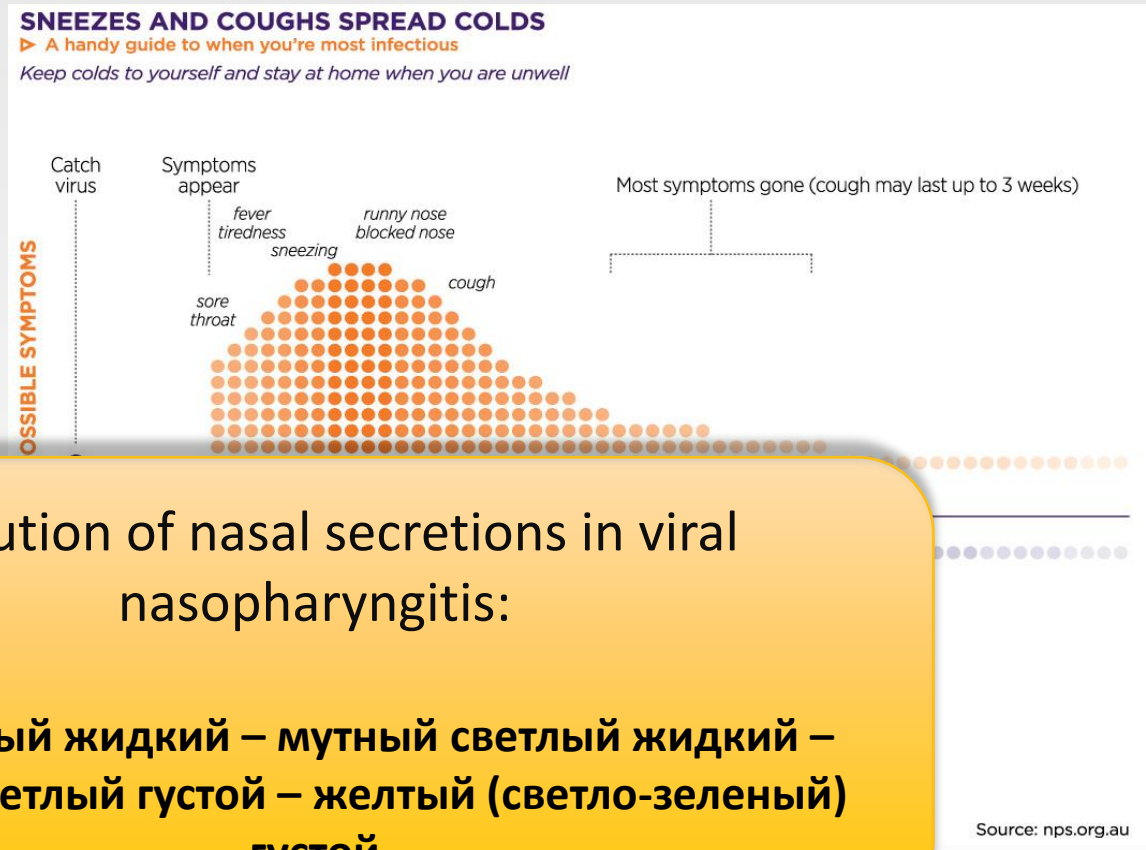
Floyd W. Denny, Jr., 2012

Критерии антибиотикотерапии ОРИ (бактериальной инфекции)

- Длительная, более 3 дней лихорадка;
- **Появление слизисто-гнойного отделяемого;** ?
- Одышка без бронхообструкции;
- Асимметрия хрипов;
- Наличие лейкоцитоза, нейтрофилеза со сдвигом влево.

Цвет патологического носового секрета





Evolution of nasal secretions in viral nasopharyngitis:

прозрачный жидкий – мутный светлый жидкий – мутный светлый густой – желтый (светло-зеленый) густой

Клеточный состав слизи дыхательных путей

Zuberbier, T. Pseudoallergy or nonallergic hypersensitivity / T. Zuberbier // Allergy. 1999. - Vol. 54. - P. 397-398.

	NET %	MKF %	EPC %	LIMF %	EOZ %
Норма у некурящего человека	**20,1**	**70,8**	**3,6**	**4,6**	**0,9**
Бронхиальная астма неконтролируемая	18,3	25,6	19,4	10,6	**26,1**
Острый бронхит вирусной этиологии	21,1	13,2	5,8	**37,0**	22,9
Острый бронхит бактериальной этиологии	**43,0**	15,4	10,7	11,2	19,7

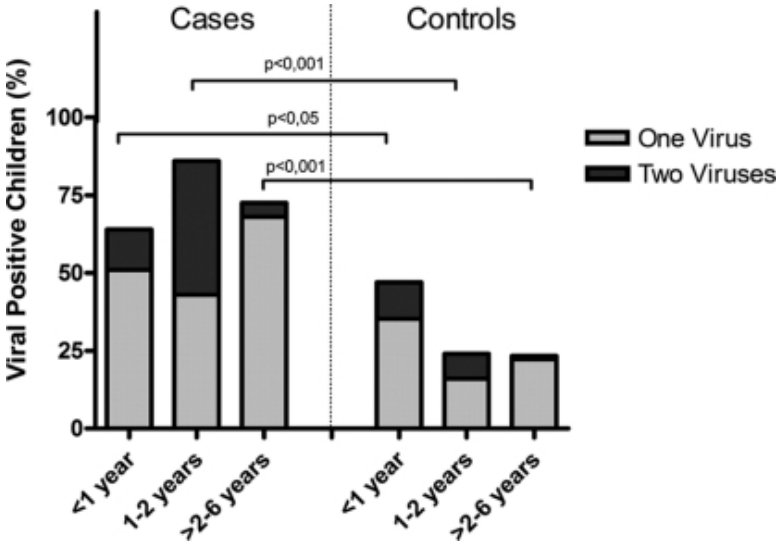
Asthma and natural colds: inflammatory induced in induced sputum. A feasibility study / E. Pizzichini, M. Pizzichini, A. Efthimiadis et al. // Am. J. Respir. Crit. Care Med.- 1998.-Vol. 158.-P. 1178-1184.

"This test is to see if we need to do more tests."

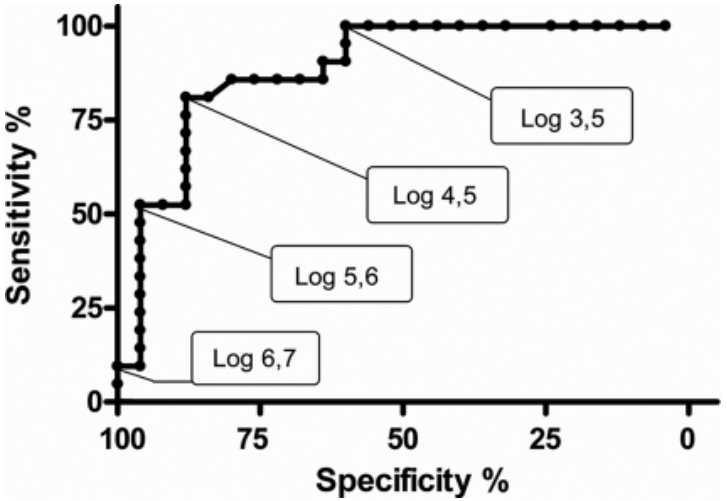
JCM Journal of Clinical Microbiology | AMERICAN SOCIETY FOR MICROBIOLOGY ASMsociety

Frequent Detection of Respiratory Viruses without Symptoms: Toward Defining Clinically Relevant Cutoff Values

Rogier R. Jansen, Joanne Wieringa, [...], and Janke Schinkel



Journal of Clinical Microbiology



Лабораторные маркеры бактерии VS. вирусы

A Novel Host-Proteome Signature for Distinguishing between Acute Bacterial and Viral Infections

Kfir Oved[1]*, Asi Cohen[1], Olga Boico[1], Roy Navon[1], Tom Friedman[1,2], Liat Etshtein[1,3], Or Kriger[1¤a], Ellen Bamberger[1,3,5], Yura Fonar[1¤b], Renata Yacobov[4], Ron Wolchinsky[6], Galit Denkberg[7], Yaniv Dotan[3,8], Amit Hochberg[4], Yoram Reiter[6], Moti Grupper[3,9], Isaac Srugo[3,5], Paul Feigin[10], Malka Gorfine[10], Irina Chistyakov[3,5], Ron Dagan[11], Adi Klein[4], Israel Potasman[3,9], Eran Eden[1]*

1 MeMed Diagnostics, Tirat Carmel, Israel, **2** Rambam Medical Center, Haifa, Israel, **3** Rappaport Faculty of Medicine, Technion-Israel Institute of Technology, Haifa, Israel, **4** Department of Pediatrics, Hillel Yaffe Medical Center, Hadera, Israel, **5** Department of Pediatrics, Bnai-Zion Medical Center, Haifa, Israel, **6** Faculty of Biology, Technion-Israel Institute of Technology, Haifa, Israel, **7** Applied Immune Technologies, Haifa, Israel, **8** Department of Internal Medicine, Bnai-Zion Medical Center, Haifa, Israel, **9** Infectious Diseases Unit, Bnai-Zion Medical Center, Haifa, Israel, **10** Faculty of Industrial Engineering and Management, Technion-Israel Institute of Technology, Haifa, Israel, **11** Pediatric Infectious Disease Unit and Clinical Microbiology Laboratory, Soroka Medical Center, Beer-Sheva, Israel

Новая протеомная идентификация характеризующая острую бактериальную и вирусную инфекции

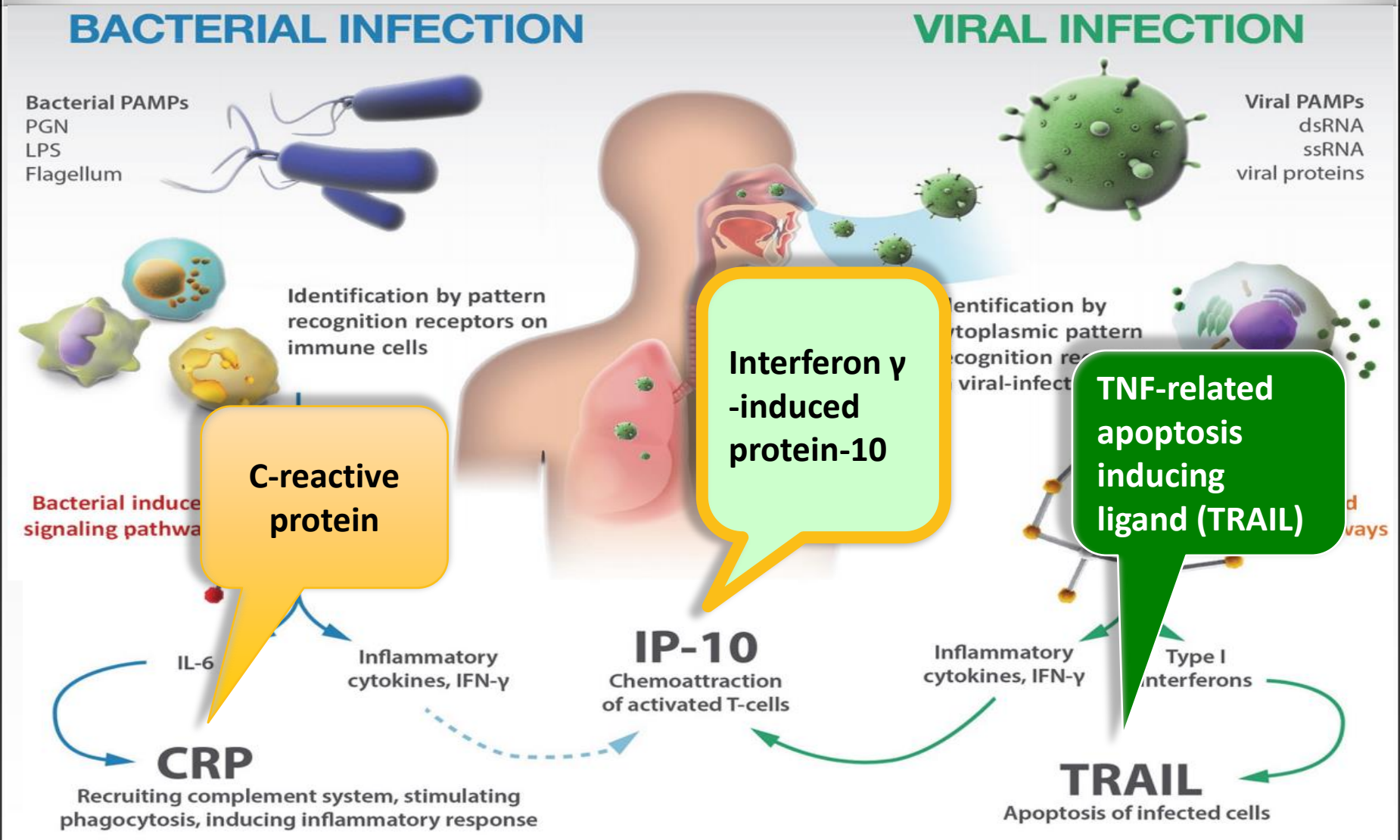
Published: March 18, 2015

Procalcitonin,
C-reactive protein,
Interleukin-6

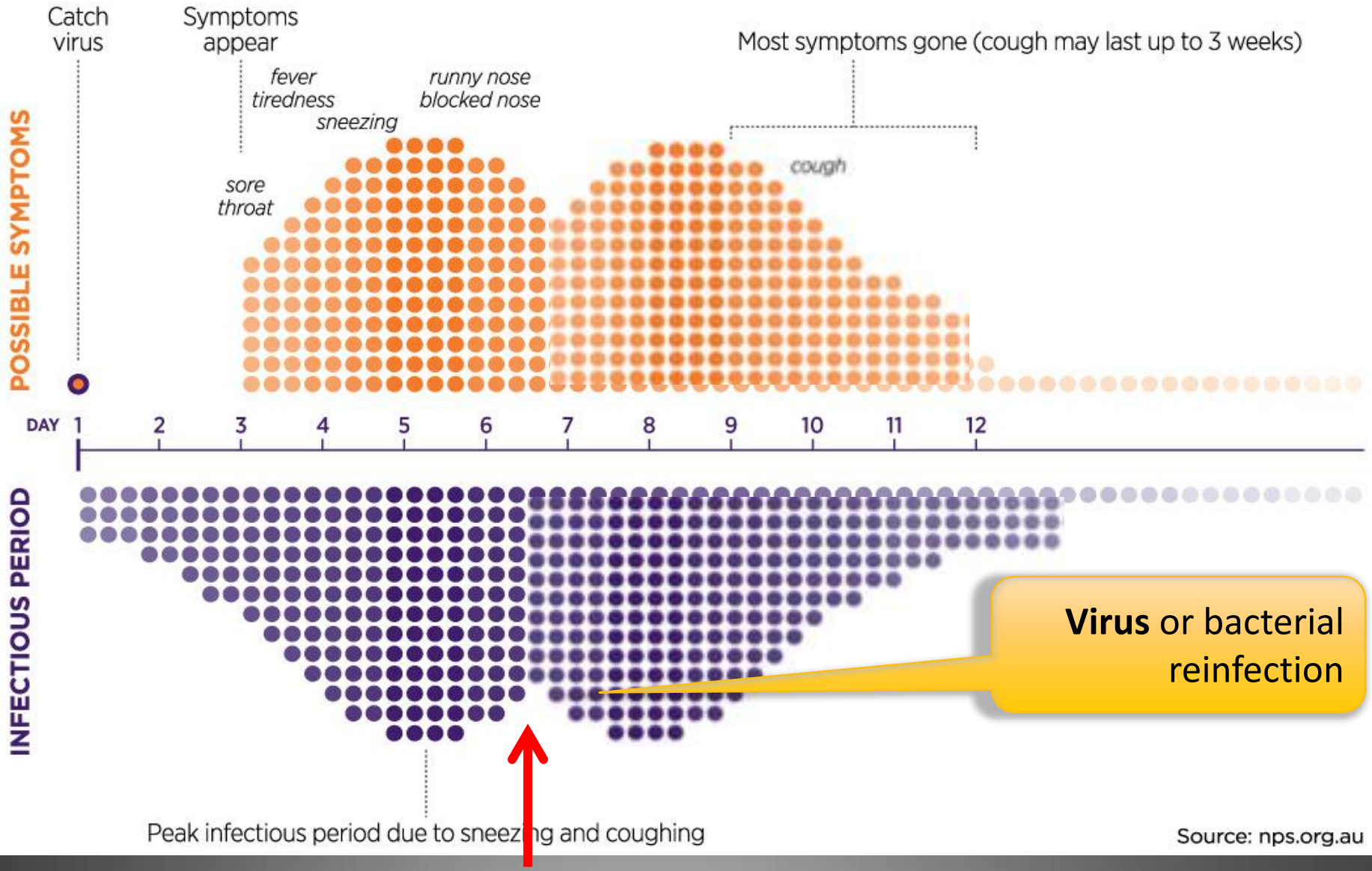
TNF-related apoptosis inducing ligand (TRAIL), γ-INF,
Interferon γ-induced protein-10

Oved K, 2015 PLoS ONE 10(3): e0120012. doi:10.1371/journal.pone.0120012

Лабораторные маркеры бактерии VS. вирусы



Oved K, 2015 PLoS ONE 10(3): e0120012. doi:10.1371/journal.pone.0120012


Catch virus
Symptoms appear
Most symptoms gone (cough may last up to 3 weeks)
fever
tiredness
runny nose
blocked nose
sneezing
sore throat
cough
POSSIBLE SYMPTOMS
DAY 1 2 3 4 5 6 7 8 9 10 11 12
INFECTIOUS PERIOD
Virus or bacterial reinfection
Peak infectious period due to sneezing and coughing
Source: nps.org.au

Варианты бактериальных осложнений ОРВИ

РАННИЕ

Вирусно-бактериальные ассоциации

Макролид или (и) Амоксициллин

World Health Organization. Pocket Book of Hospital Care: Guidelines for the Management of Common Illnesses With Limited Resources. WHO press, Geneva, Switzerland.

Острый воспалительный период

Период регрессии воспаления и восстановления слизистой

Адаптировано по K. Thorburn, 2012

Варианты бактериальных осложнений ОРВИ

ПОЗДНИЕ

Вторичная инфекция

- Цефалоспорины, карбапенемы и макролид.
- АБТ гостительных возбудителей и макролид.

Острый воспалительный период

Период регрессии воспаления и восстановления слизистой

Адаптировано по K. Thorburn, 2012

Hindawi Publishing Corporation

Hindawi

Mediators of Inflammation

Review Article

Macrolide Therapy in Respiratory Viral Infections

Jin-Young Min and Yong Ju Jang

Department of Otolaryngology, Asan Medical Center, University of Ulsan College of Medicine, 388-1 Pungnap-2dong, Songpa-gu, Seoul 138-736, Republic of Korea

Correspondence should be addressed to Yong Ju Jang, jangyj@amc.seoul.kr

Received 20 February 2012; Revised 8 April 2012; Accepted 10 April 2012

Academic Editor: Kazuhito Asano

BACTERIOPHAGES 2015

AGENDA

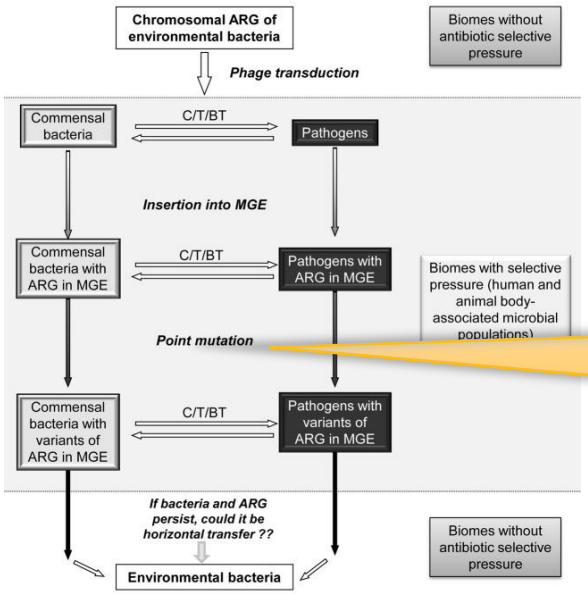
27th Jan - 29 Jan
London, UK

EuroSciCon

Mob Genet Elements. 2013 Jul 1; 3(4)

Could bacteriophages transfer antibiotic resistance genes from environmental bacteria to human-body associated bacterial populations?

Maite Muniesa, Marta Colomer-Lluch and Juan Jofre*
Department of Microbiology; University of Barcelona; Barcelona, Spain



Могут ли **бактериофаги** передавать гены устойчивости к антибиотикам из окружающей среды бактериям человеческого тела.

Транс-горизонтальный перенос антибиотико-резистентных генов при **бактериофаговой** трансдукции

Bottlenecks in the transferability of antibiotic resistance from natural ecosystems to human bacterial pathogens

José L. Martínez*

Departamento de Biotecnología Microbiana, Centro Nacional de Biotecnología-Consejo Superior de In

Edited by:
Stefania Stefani, University of Catania, Italy

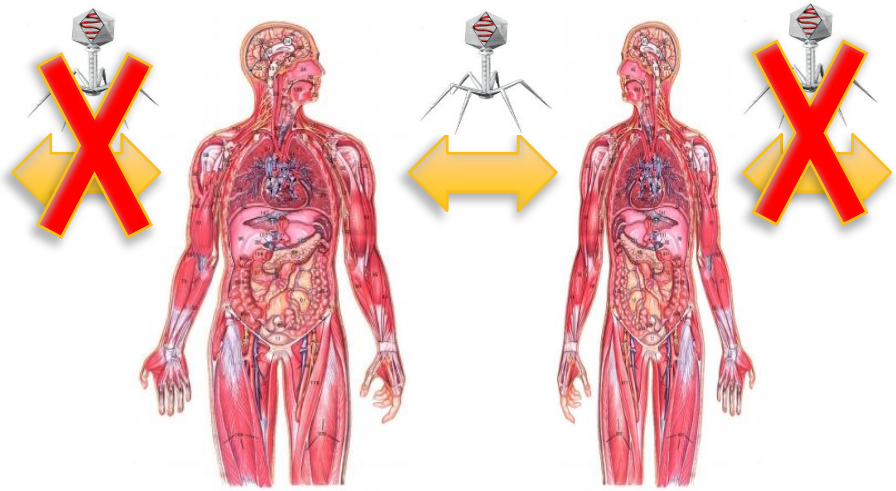
Reviewed by:
Julian Davies, University of British Columbia, Canada
Teresa M. Coque, Hospital Universitario Ramón y Cajal, Spain

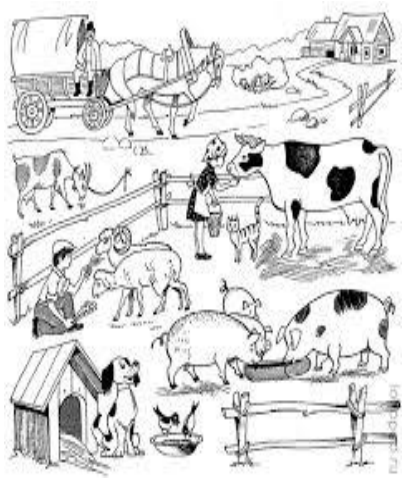
***Correspondence:**
José L. Martínez, Departamento de Biotecnología Microbiana, Centro Nacional de Biotecnología-Consejo Superior de Investigaciones Científicas, Darwin 3, Cantoblanco, 28049 Madrid, Spain.
e-mail: jlmtnez@cnb.csic.es

It is generally accepted that resistance ge
horizontal gene transfer originated in envir
sequence, there is increasing concern on t
may play in the evolution of resistance. Rec
determinants that can provide antibiotic res
host is much larger than what is actually four
tence of bottlenecks modulating the transfe
genes. In this review, the role that differer
connectivity, fitness costs, or second-order
specific resistance determinant in a populat

**Keywords: horizontal gene transfer, antibiotic resistance, h
second-order selection**

Узкие места переноса антибиотикорезистентности от природных экосистем в бактериальных патогенов человека.





Подсмотренная мишень у бактериофагов

OPEN ACCESS Freely available online

PLOS | ONE

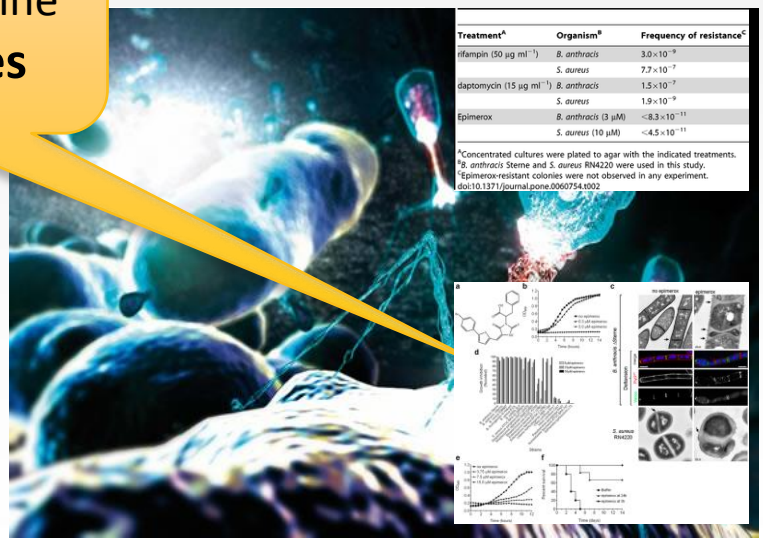
Use of a Bacteriophage Lysin to Identify a Novel Target for Antimicrobial Dev

Raymond Schuch[1*¤b], Adam J. Pelzek[1], As.
Benjamin Y. Winer[1], Andrew Farnsworth[3], S.
Adrienne Clifford[5], David J. Bearss[5¤a], Haripr
Vincent A. Fischetti[1]

ory of Bacterial Pathogenesis and Immunology, The Rockefeller
lew York, New York, United States of America, 3 Informatio
y of Structural Microbiology, The Rockefeller University, New
Inc.), Dublin, California, United States of America

Использование лизинов **бактериофагов** в определении новых мишеней антимикробной эволюции

UDP- N - acetylglucosamine **2-epimerases**



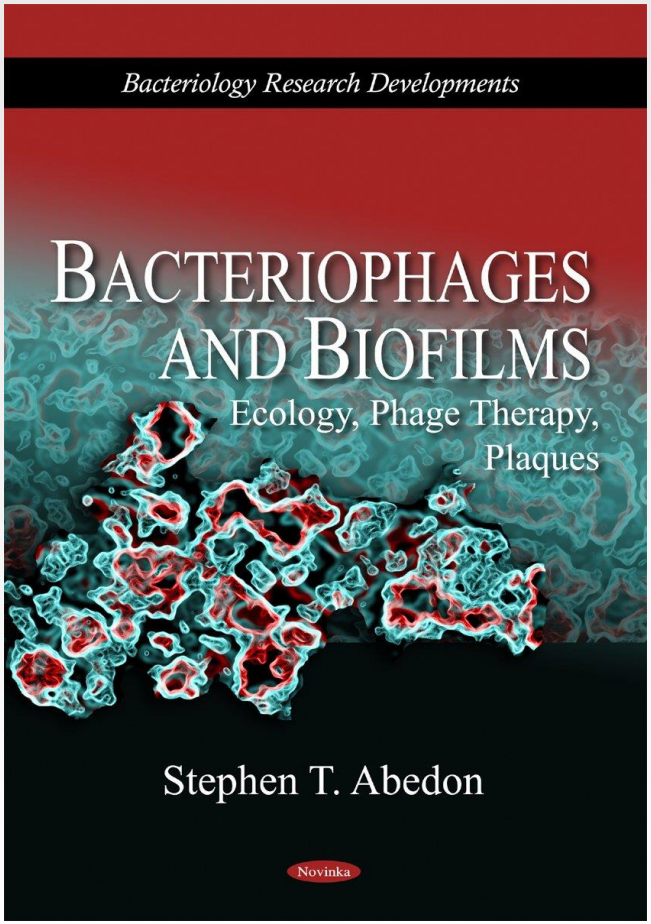
Treatment[A]	Organism[B]	Frequency of resistance[C]
rifampin (50 μg ml^{-1})	*B. anthracis*	3.0×10^{-9}
	S. aureus	7.7×10^{-7}
daptomycin (15 μg ml^{-1})	*B. anthracis*	1.5×10^{-7}
	S. aureus	1.9×10^{-9}
Epimerox	*B. anthracis* (3 μM)	$<8.3\times10^{-11}$
	S. aureus (10 μM)	$<4.5\times10^{-11}$

[A]Concentrated cultures were plated to agar with the indicated treatments.
[B]*B. anthracis* Sterne and *S. aureus* RN4220 were used in this study.
[C]Epimerox-resistant colonies were not observed in any experiment.
doi:10.1371/journal.pone.0060754.t002

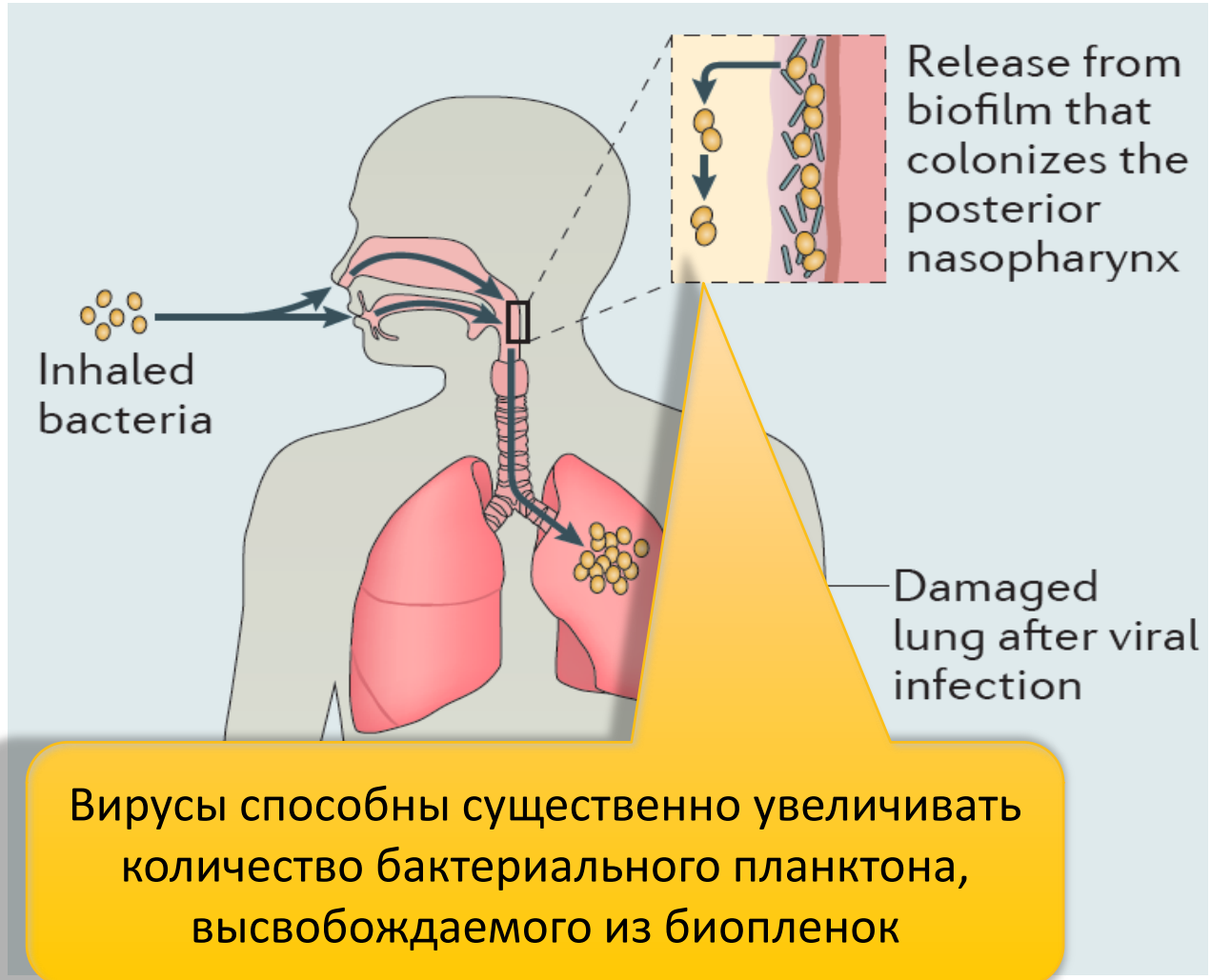
Аллостерический ингибитор бактериальной 2-эпимеразы

Schuch R et al. 2013.
Use of a Bacteriophage Lysin t
Novel Target for Antimicrobial
PLoS ONE 8(4): e60754
10.1371/journal.pone.

Бактериофаги и биопленки



Вирусы «вспахивают» биопленки !?



Вирусы способны существенно увеличивать количество бактериального планктона, высвобождаемого из биопленок

Jonathan A. McCullers, 2014

The co-pathogenesis of influenza viruses with bacteria in the lung, NATURE | APRIL 2014 | VOLUME 12

Туберкулез (ТБ)

Туберкулез
Стратегия "Остановить ТБ"
Стратегия ДОТС
ТБ/ВИЧ и ТБ с лекарственной устойчивостью
Поставщики медицинских услуг
Больные туберкулезом
Публикации о ТБ
О департаменте

Воздушно-капельная инфекция

Взгляд на проблемы, связанные с прекращением распространения МЛУ-ТБ и ШЛУ-ТБ, и пути их решения

"Воздушно-капельная инфекция" – это книга о борьбе с распространением туберкулеза с множественной и широкой лекарственной устойчивостью (МЛУ-ТБ и ШЛУ-ТБ) во всем мире. Книга, написанная Джоном Доннели, представляет собой сборник интервью, реопортажей и фотографий из разных уголков мира.

Я МОГУ остановить ТБ

Всемирный день борьбы с туберкулезом 2014 г.

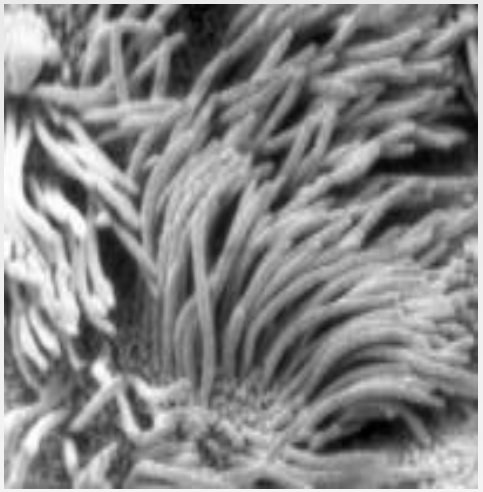
В центре внимания

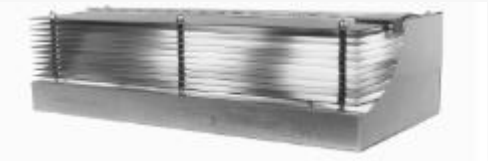
Доклад ВОЗ о борьбе с ТБ, 2014 г.

Стратегия борьбы с ТБ
Основные положения

Аэрогенная или воздушно-капельная…?

Аэрогенная или воздушно-капельная…?

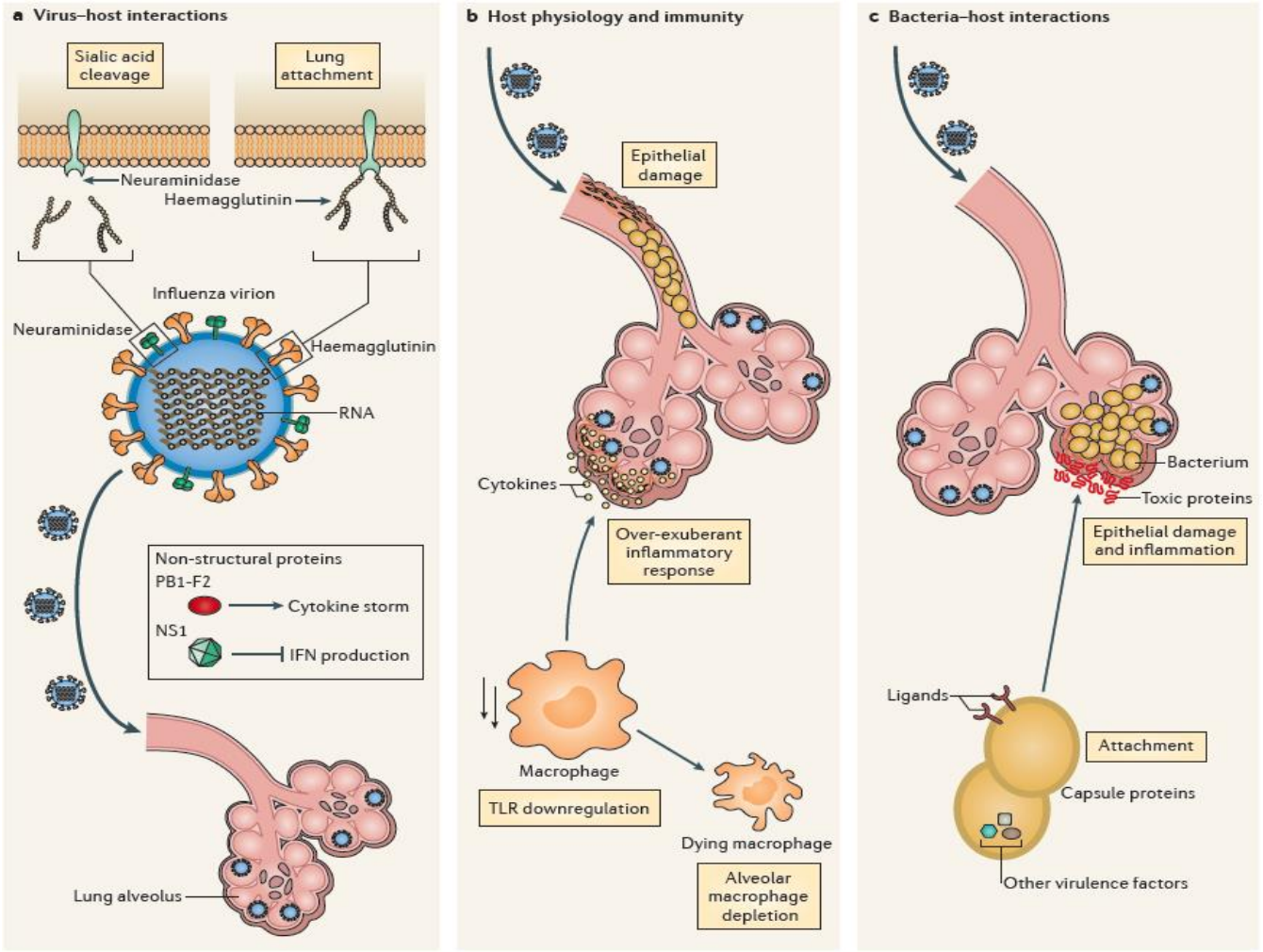




- **Экранированные** УФБО.
- **Маски** на кашляющих пациентах.
- **Респираторы** на посетителях, персонале, ряде пациентов.

Аэрогенное инфицирование вирусом как триггер бактериальной пневмонии

The co-pathogenesis of influenza viruses with bacteria in the lung, NATURE | APRIL 2014 | VOLUME 12



Jonathan A. McCullers, 2014


Google natural folk treatment of respiratory infection

Поиск Новости Картинки Видео Ещё Инструменты поиска

Результатов: примерно 187 000 (0,58 сек.)

www.rd.com/slideshows/**natural**-cough-**remedies**/ Перевести эту страницу
Thyme is an officially approved German **treatment** for coughs, upper **respiratory infections**, **bronchitis**, and whooping cough, with good reason: Those tiny leaves ...

Folk Medicine

www.rice.edu/projects/.../Courses/.../mod7.html Перевести эту страницу
Folk Medicine in Hispanics in the Southwestern United States ... The term " disease" generally signifies any **organic** illness. .... Upper **respiratory infection**.

Bronchitis Remedies on Pinterest | Sinus Infection Cure ...

https://www.pinterest.com/explore/**bronchitis-remedies**/
Lungs Formula, Home **Remedies**, **Bronchitis**, Cough, **Nature Remedies**, Jill, Asthma, ... Complete **Cure**, **Folk Remedies**, Treats **Bronchitis**, Laryngitis **Remedies**.

Vanquishing Viruses - 10 Natural Antiviral Remedies ...

www.ion.ac.uk/information/.../vanquishingviru... Перевести эту страницу
But what about **natural treatments** that can actually kill viruses and shorten the ... patients with **respiratory tract infections** and 120 out of 172 patients with viral skin ... been used in **folk medicine** to **treat** a wide range of illnesses, including colds, ...

Print Screen c caŭma www.news.xywy.com

1 首先，上呼吸道感染又称为普通感冒，广义上包括：普通感冒、病毒性咽炎等等，狭义的上呼吸道感染又称普通感冒，是最常见的急性呼吸道感染性疾病，患者大多数由病毒引起，少数由细菌引起。

2 其次，一般情况下有明显的急性鼻炎和上呼吸道炎症表现，通常不会发热，无中毒症状，往往症状都较轻，包括有：咳嗽、打喷嚏、流鼻水、咽喉痛，还可能有痰或是头痛的症状，我们不能忽视它建议及时进行治疗。

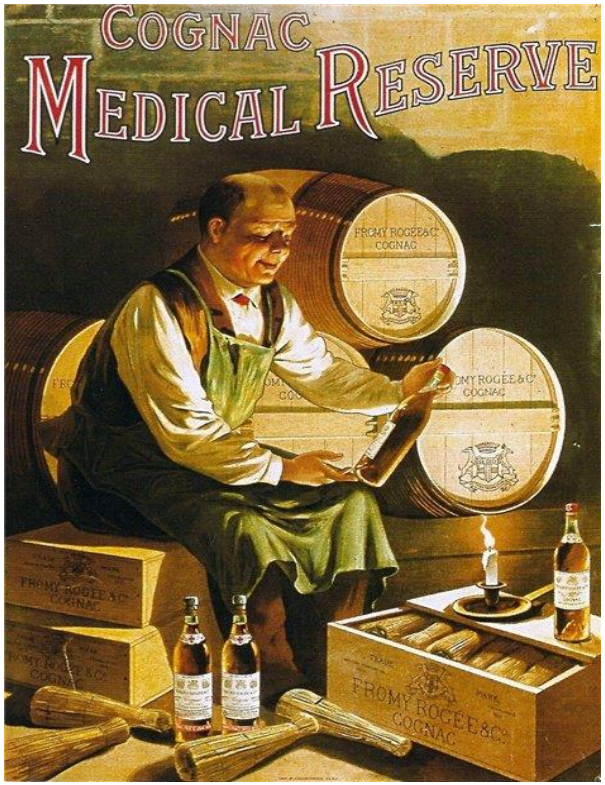
3 最后，患者要注意对因治疗和对症治疗，对症治疗包括：休息、解热镇痛、镇咳剂，如果频繁打喷嚏、流鼻涕，可选用马来酸氯苯那敏等抗组胺药；病因治疗包括有：抗菌药物治疗、抗病毒药物治疗。

Dossier Soigner un rhume au naturel

RHUME, GRIPPE, COMMENT TRAITER SIMPLEMENT UNE INFECTION VIRALE ?

Nez qui coule, gorge qui gratte, voire **fièvre** et **courbatures**, que faire contre ces symptômes indiquant une **infection virale** telle un **rhume** ou une **grippe** ?

Il existe des traitements très simples pour rapidement améliorer votre état.



Common Cold Overview

Written by the Healthline Editorial Team | Published on 30 Июль 2014 г.
Medically Reviewed by Kenneth R. Hirsch, MD on 30 Июль 2014 г.

Part 1 of 3: Overview

Overview

A cold is a common viral infection of the upper respiratory tract—namely, your nose and throat. According to the National Institutes of Health (NIH), Americans "catch" an estimated one billion colds every year. Typical cold symptoms include a runny nose, nasal congestion, sneezing, coughing, and a sore throat. Colds can occur at any time during the year but are most common in the winter months.

Colds affect young children more often than adults. Most adults suffer from about two to four colds per year. According to Boston Children's Hospital, children—those ages 6 and under in particular—may experience up to six to 10 colds annually. According to the Centers for Disease Control and Prevention (CDC),

Чеснок помогает не только от вампиров…

Contents lists available at ScienceDirect

Asian Pacific Journal of Tropical Biomedicine

journal homepage: www.elsevier.com/locate/apjtb

Document heading doi: 10.1016/S2221-1691(13)60146-X

Combined antibacterial activity of stingless bee (*Apis mellipodae*) honey and garlic (*Allium sativum*) extracts against standard and clinical pathogenic bacteria

Berhanu Andualem*

Department of Biotechnology, Natural and Computational Sciences Faculty, University of Gondar, Gondar, Ethiopia

PEER REVIEW

Peer reviewer

Amare Gessesse, PhD in Applied Microbiology, Associate Professor, Addis Ababa University, Institute of Biotechnology, Addis Ababa, Ethiopia.
Tel: +251914708989
E-mail: amare.gessesse@gmail.com

Comments

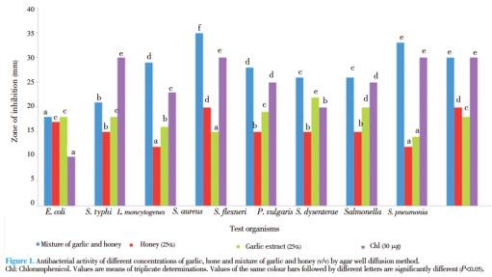
This is a very good finding in which the author investigated the synergistic antimicrobial activity of mixture of garlic extract and *Apis mellipodae*

ABSTRACT

Objective: To investigate the synergic antibacterial activity of garlic and tazma honey against standard and clinical pathogenic bacteria.

Methods: Antimicrobial activity of tazma honey, garlic and mixture of them against pathogenic bacteria were determined. Chloramphenicol and water were used as positive and negative controls, respectively. Minimum inhibitory concentration (MIC) and minimum bactericidal concentration of antimicrobial samples were determined using standard methods.

Results: Inhibition zone of mixture of garlic and tazma honey against all tested pathogens was significantly ($P \leqslant 0.05$) greater than garlic and tazma honey alone. The diameter zone of inhibition ranged from (18±1) to (35±1) mm for mixture of garlic and tazma honey, (12±1) to (20 ±1) mm for tazma honey and (14±1) to (22±1) mm for garlic as compared with (10±1) to (30± 1) mm for chloramphenicol. The combination of garlic and tazma honey (30–35 mm) was more significantly ($P \leqslant 0.05$) effective against *Salmonella* (NCTC 8385), *Staphylococcus aureus* (ATCC 25923), *Lyesria moncytogenes* (ATCC 19116) and *Streptococcus pneumonia* (ATCC 63). Results also showed considerable antimicrobial activity of garlic and tazma honey. MIC of mixture of garlic and tazma



Антибактериальная активность меда

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PLoS one

Two Major Medicinal Honeys Have Different Mechanisms of Bactericidal Activity

Paulus H. S. Kwakman[1], Anje A. te Velde[2], Leonie de Boer[1], Christina M. J. E. Vandenbroucke-Grauls[1,3], Sebastian A. J. Zaat[1]*

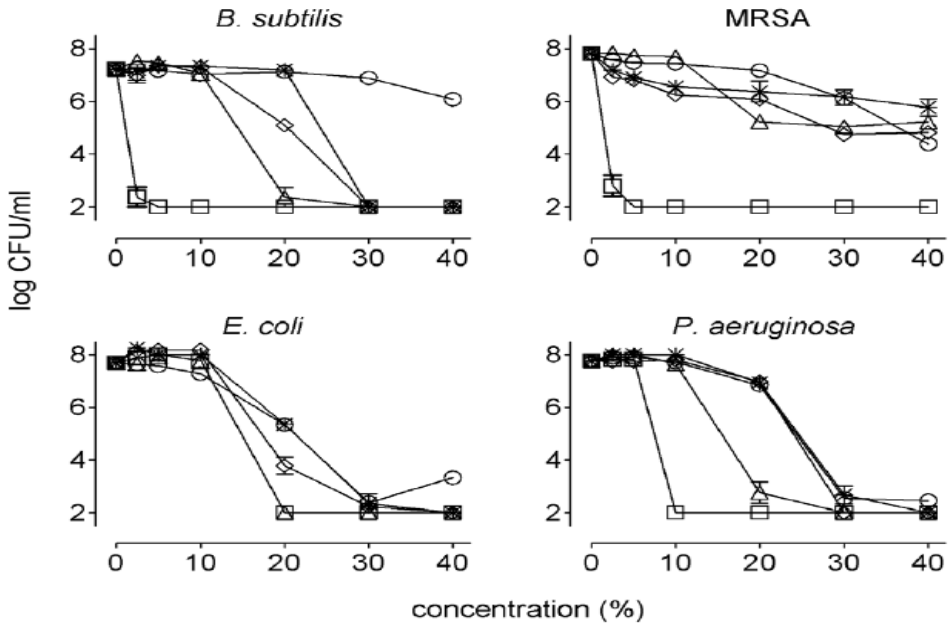


Figure 3. Contribution of MGO to the bactericidal activity of manuka honey. The indicated bacteria were incubated in various concentrations (v/v) of manuka honey in incubation buffer (squares), in manuka with addition of glyoxalase I (triangles) or glyoxalase I and SPS without (diamonds) or with adjustment of the pH to 7.0 (asterisks), or in a honey-equivalent sugar solution (circles). After 24 hours, numbers of surviving bacteria were determined.

doi:10.1371/journal.pone.0017709.g003

Med J Aust 2010; 193 (11): 730-734

Visiting a sauna: does inhaling hot dry air reduce common cold symptoms? A randomised controlled trial

Daniel Pach, Bettina Knöchel, Rainer Lüdtke, Katja W… Stefan N Willich and Claudia M Witt

MJA Christmas Competition

Посещая сауну: **вдыхать ли горячий воздух для уменьшения симптомов простуды?** Рандомизированное контролируемое исследование

ABSTRACT

Objective: T… temperat… symptor…

Design, treatme… in Berlin… 2008 an… assigne…

Interve… sauna, c… at room…

Main ou… over tim… medicatio…

Results: No significant difference between groups was observed for AUC representing symptom severity over time (intervention group mean, 31.2 [SEM, 1.8]; control group mean, 35.1 [SEM, 2.3]; group difference, –3.9 [95% CI, –9.7 to 1.9]; $P = 0.19$). However, significant differences between groups were found for medication use on Day 1 ($P = 0.01$), symptom severity score on Day 2 ($P = 0.04$), and participants' ratings of the effectiveness of the therapy on Day 7 ($P = 0.03$).

Conclusion: Inhaling hot air while in a sauna has no significant impact on overall symptom severity of the common cold.

Trial registration: ClinicalTrials.gov identifier NCT00552981.

MJA 2010; 193: 730–734

The common cold, mainly caused by rhinoviruses or coronaviruses,[1,2] is a frequent problem all over the world. Although the symptoms are generally benign, viral colds result in significant costs to the economy due to lost workdays and school attendance.[3] Convincing treatment options without side effects are not known.[4] Traditionally, the local application of heat is used to treat the symptoms of the common cold — for example, ingesting hot fluids such as tea or chicken soup,[5] or inhaling hot vapour.[6] Moreover, few clinical trials have been conducted to evaluate such treatment options.[6-8] It has been suggested that local hyperthermia of the nasal mucosa can affect rhinovirus replication.[7-9] A Cochrane review of six trials — one from Israel, two from the United Kingdom, and three from the United States — found that only the studies from Israel and UK showed that steam was beneficial for relief of common cold symptoms.[6] Results on symptom indices were equivocal; therefore, it was concluded that steam inhalation cannot be recommended for the routine treatment of common cold symptoms and further blind randomised controlled trials needed to be conducted.

In the German city of Essen, a sauna with dry air heated to 90°C exists (www.unperfekthaus.de/projekte/angezogen-sauna) where people can visit dressed in street clothes for the relief of common cold symptoms. This type of sauna is widely available and offers enough dry air to heat the throat, and wetness of the skin is only caused by sweating, not by high humidity. With the aim of heating the throat, people stay in this sauna for only a short period to avoid acquired common cold, using a symptom severity score.

METHODS

Design

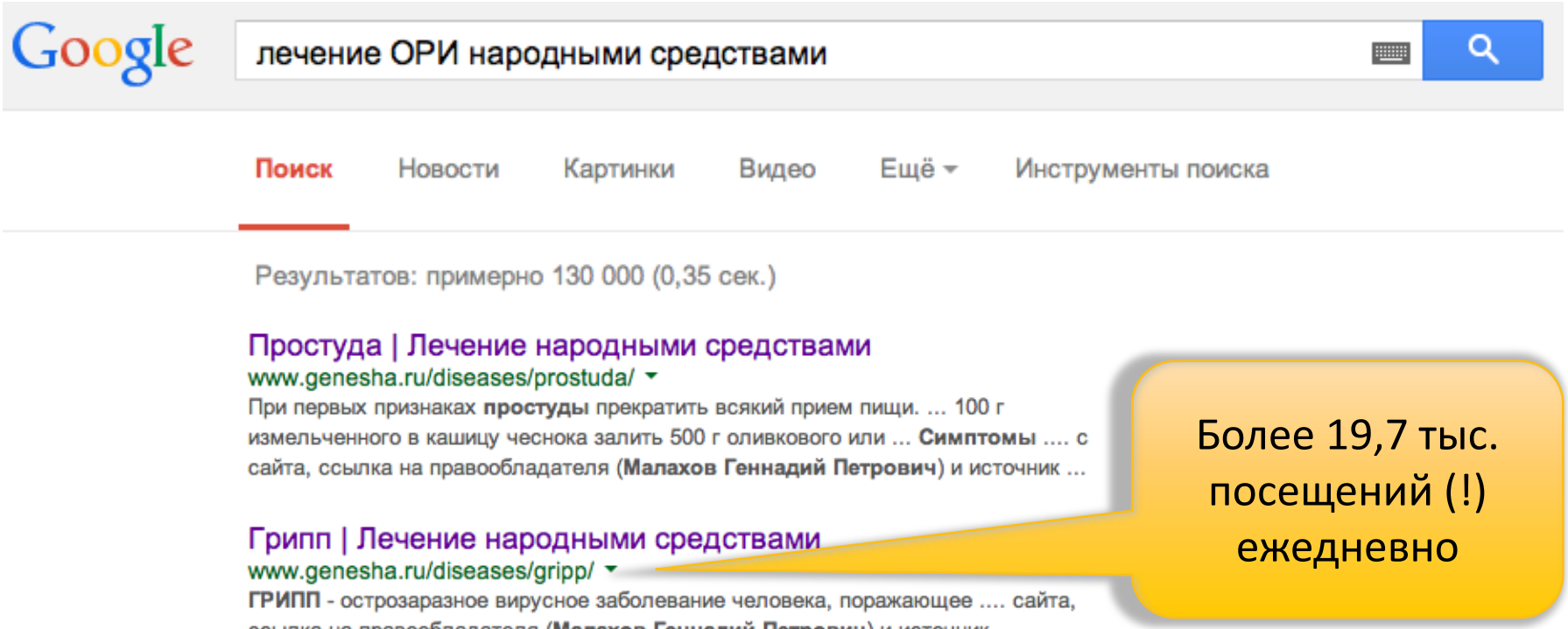
A randomised single-blind controlled trial was conducted, in which participants were randomly assigned to an intervention group (inhaling hot air within a hot sauna) or a

ceuticals for Human Use Guideline for Good Clinical Practice (ICH GCP), and was approved by the local ethics committee (Charité University Medical Center).

Participants

Employees of the Charité University Medical Center, medical students and people working near the Charité campus were recruited between November 2007 and March 2008

www.mja.com.au/system/files/issues/193_11_061210/pac10642_fm.pdf


Google
лечение ОРИ народными средствами
Поиск
Новости
Картинки
Видео
Ещё
Инструменты поиска
Результатов: примерно 130 000 (0,35 сек.)
Простуда | Лечение народными средствами
www.genesha.ru/diseases/prostuda/
При первых признаках простуды прекратить всякий прием пищи. ... 100 г измельченного в кашицу чеснока залить 500 г оливкового или ... Симптомы .... с сайта, ссылка на правообладателя (Малахов Геннадий Петрович) и источник ...
Грипп | Лечение народными средствами
www.genesha.ru/diseases/gripp/
ГРИПП - острозаразное вирусное заболевание человека, поражающее .... сайта, ссылка на правообладателя (Малахов Геннадий Петрович) и источник ...
Читать "Растения-антибиотики" - Малахов Геннадий ...
www.litmir.me/br/?b=112133
4 марта 2015 г. - Читать книгу онлайн "Растения-антибиотики" - Малахов Геннадий Петрович - бесплатно, ... После лечения антибиотиками существует большая ... ОРВИ, гриппом, при повышенной температуре, воспалительных ...
Голодание при острых вирусных инфекциях /грипп, ОРЗ/
golodanie-da.narod.ru/orz.htm
по Г.А.Войтовичу/ ... 6.Уриновое голодание. /По Г.П. Малахову/ ... Голодание при острых вирусных инфекциях /ОРЗ, грипп/. Голодать ... голодание. Лечение
Более 19,7 тыс. посещений (!) ежедневно

«Народные» средства лечения ОРИ ?

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«Человек – для мира, мир – для человека»

Частые вопросы

СТАТЬИ | БИБЛИОТЕКА | СИМПТОМЫ | ЗАБОЛЕВАНИЯ | ТРАВНИК | МАЛАХОВ ТВ | ЛУННЫЙ КАЛЕНДАРЬ | ГАЗЕТА МАЛАХОВ PRO | ФОРУМ | МАГАЗИН

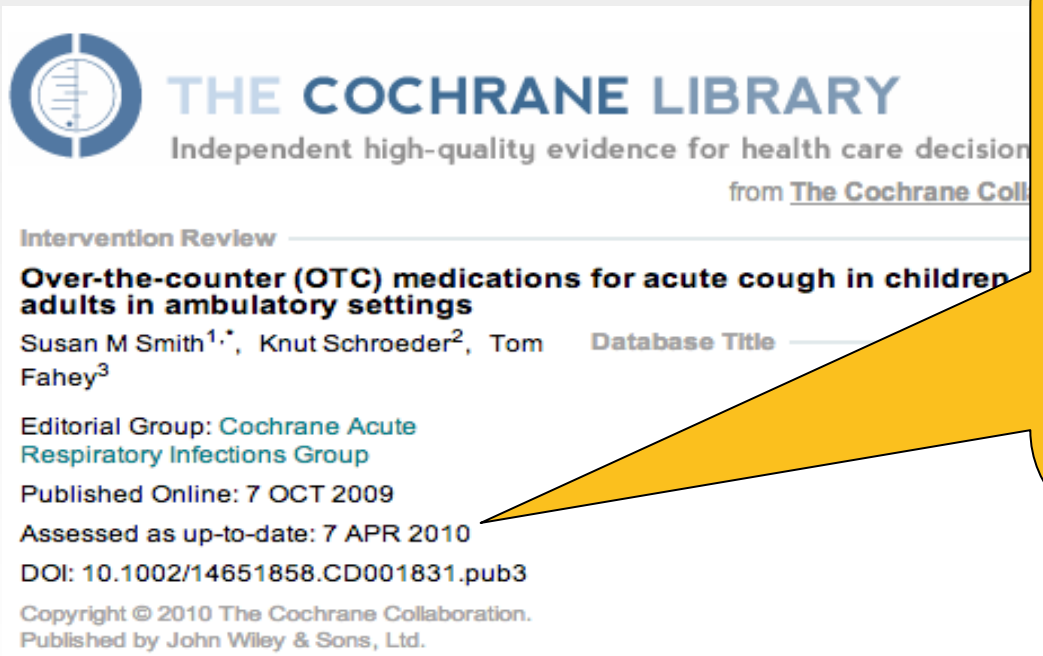
- Пить по утрам среднюю порцию свежей урины - 50-100 г (залпом или нечетное количество глотков). Если человек брезглив и не может пить урину, можно делать компрессы из свежей или старой урины на горло, это эффективно при ангине.
  - Для профилактики простудных заболеваний промывать носоглотку 1-2 раза в день и чаще свежей уриной. Если урина очень концентрирована солями и раздражает носоглотку - разбавить ее теплой водой. Для усиления эффекта можно использовать упаренные виды урины: 1/2 1/3 1/4, как разведенную со свежей, так и без нее.
  - Для излечения от инфекции, попавшей в легкие, и очищения их от слизи рекомендуется в течение 5-15 мин дышать парами старой урины.

Заблуждения о кашле

- Что-то мне докторша назначила…, а **мокроты то нет…**

- А ты в аптеке купи термопсиса и солодки – **рекой потечет…**

Кокрановский обзор, 2010



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Independent high-quality evidence for health care decision

from The Cochrane Coll

Intervention Review

Over-the-counter (OTC) medications for acute cough in children adults in ambulatory settings

Susan M Smith[1,*], Knut Schroeder[2], Tom Fahey[3]

Database Title

Editorial Group: Cochrane Acute Respiratory Infections Group

Published Online: 7 OCT 2009

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DOI: 10.1002/14651858.CD001831.pub3

«Не существует убедительных доказательств в пользу использования экспекторантов в лечении острой инфекционной патологии…»

Metanalis Twenty-six trials (18 in adults, eight in children) involving 40371 people were included.

- Женщины врачи существенно чаще назначают АБ при ОРИ.
- В 54% АБП назначались без показаний, «на всякий случай».
- **Вирусы VS. Бактерии не является ключевым вопросом.**
- В 36% пациентов (родителей) влияли на назначение АБП.
- **Длительный кашель потенцирует использование АБ**
- Обучение врачей снизило частоту выписки АБП при ОРИ в 2,1 раза

Applying psychological theories to evidence-based clinical practice: Identifying factors predictive of managing upper respiratory tract infections without antibiotics

Martin P Eccles,[1] Jeremy M Grimshaw,[2] Marie [3] Nick Steen,[1] Nigel B Pitts,[4] Ruth Thomas,[5] Elizabeth Glidewell,[5] Graeme Maclennan,[5] Debbie Bonetti,[4]

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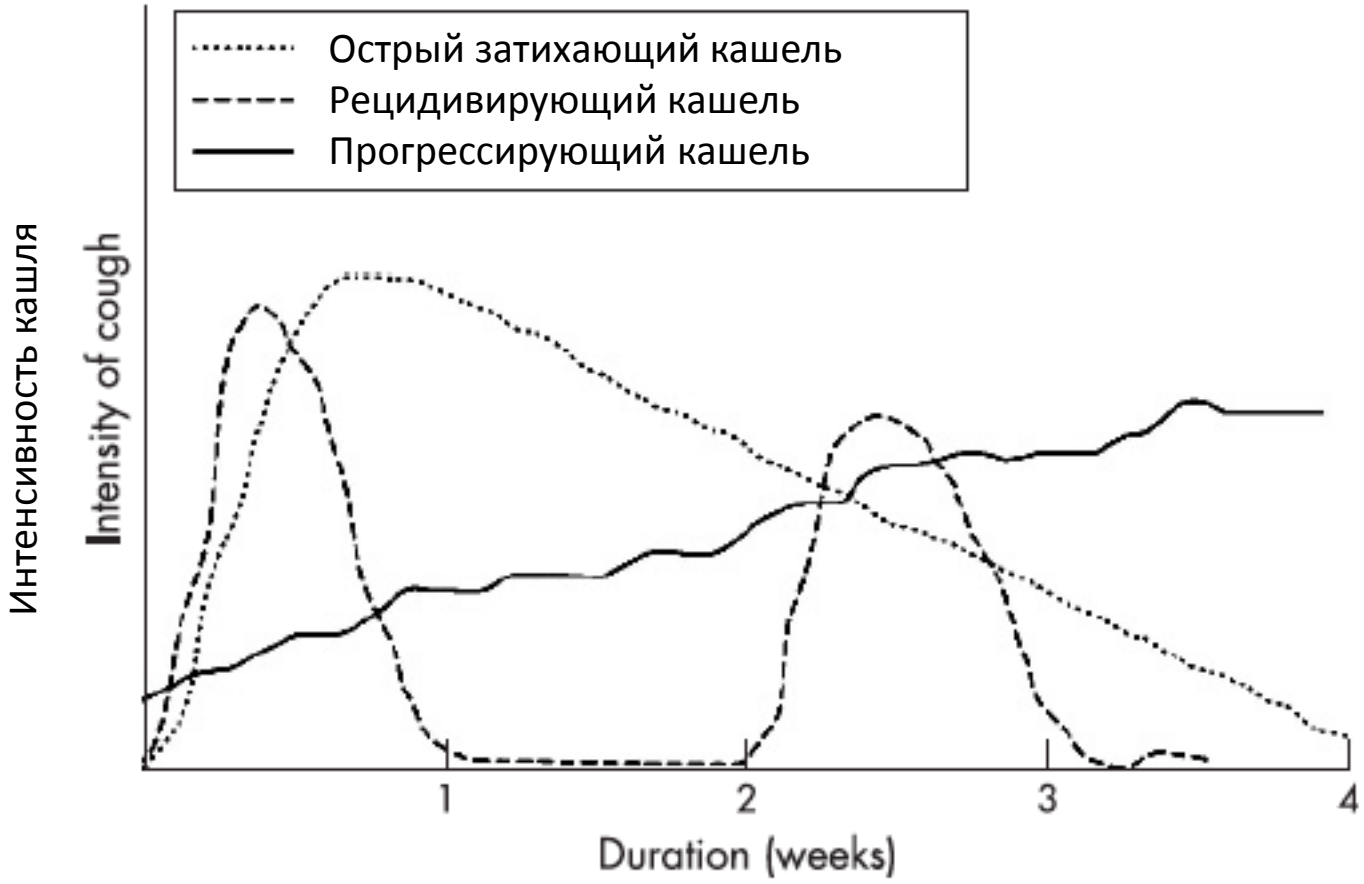
Использование психологических теорий в реальной клинической практике: прогностические факторы ведения инфекции верхних дыхательных путей без антибиотиков


Острый затихающий кашель
Рецидивирующий кашель
Прогрессирующий кашель
Интенсивность кашля
Intensity of cough
1
2
3
4
Duration (weeks)
Длительность (недели)

D M Fleming, A M Ross, K W Cross and H Kendall

The reducing incidence of respiratory tract infection and its relation to antibiotic prescribing

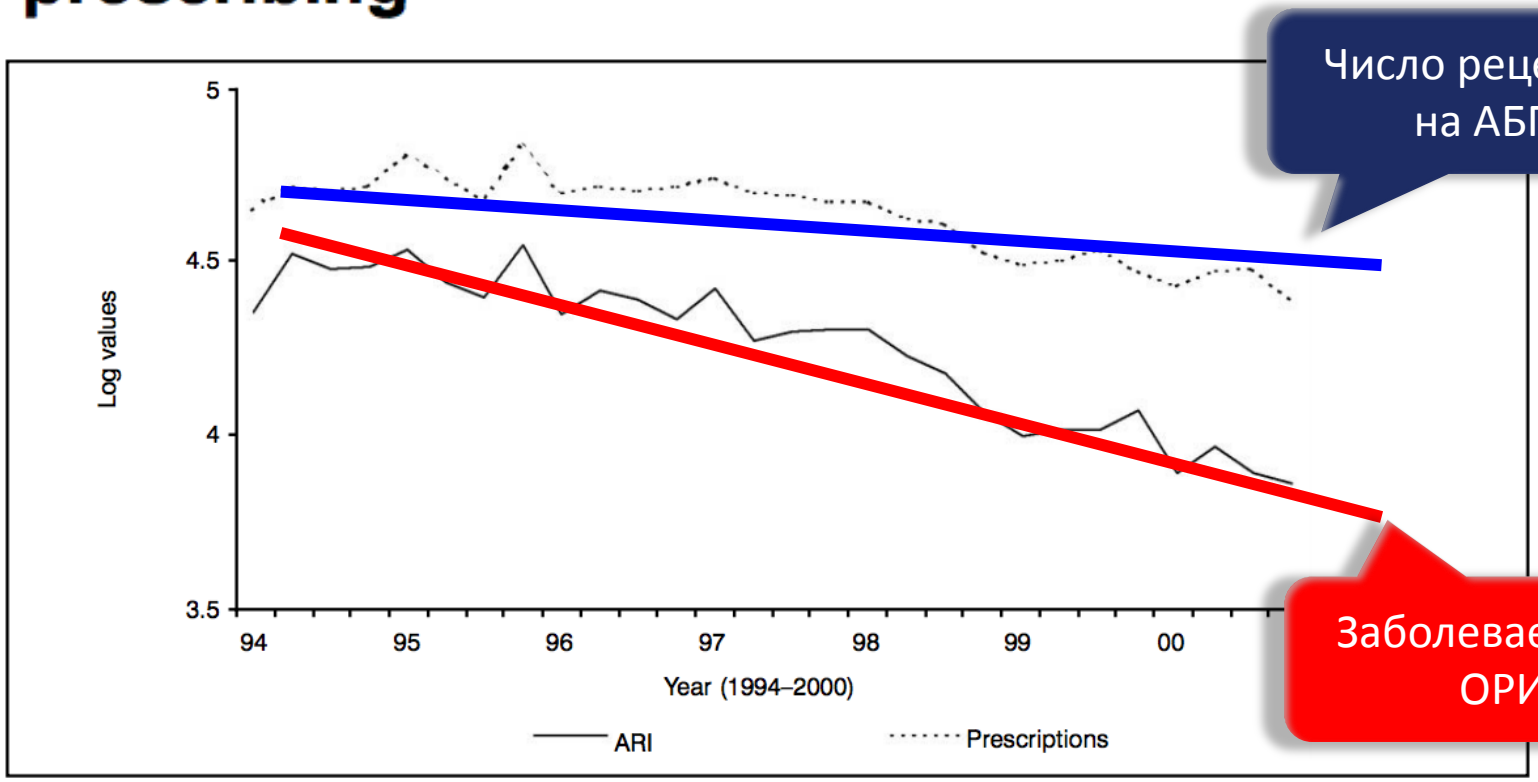


Figure 5. Seasonally adjusted trends in incidence of acute respiratory tract infections (ARI [per 1000]) and antibiotic prescriptions (per 100 000): quarterly data logged.

Доктор, не лечите меня каждый раз антибиотиком…

Coniuncte !!!

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