



Actualització en hemoptisi

L'hemoptisi: una malaltia espontània?

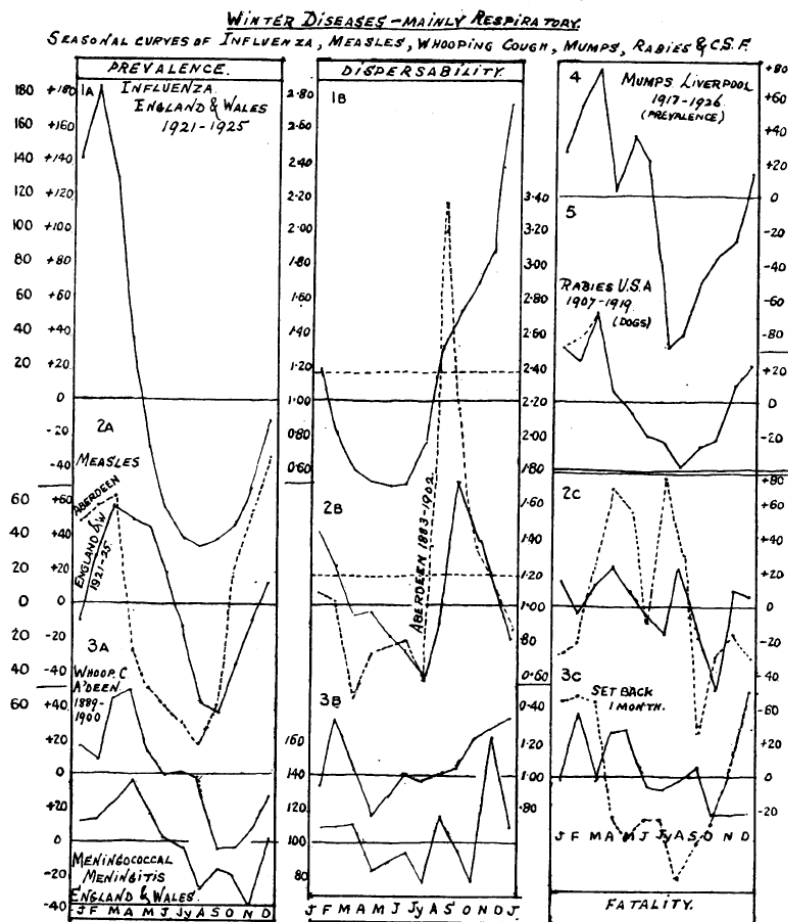
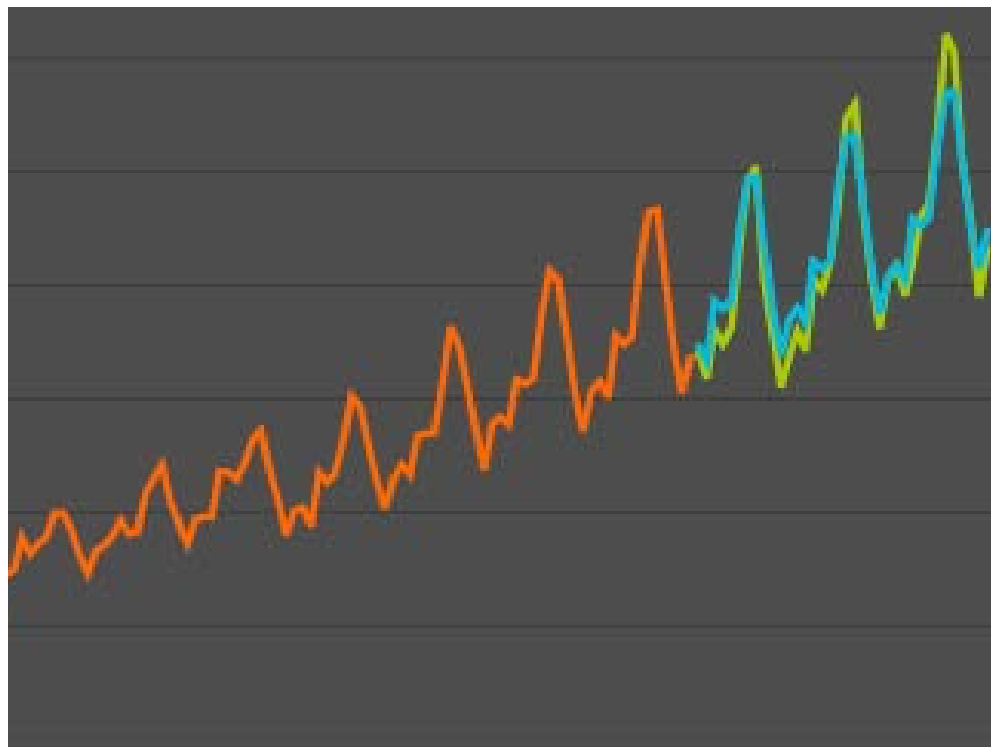


DIAGRAM III.

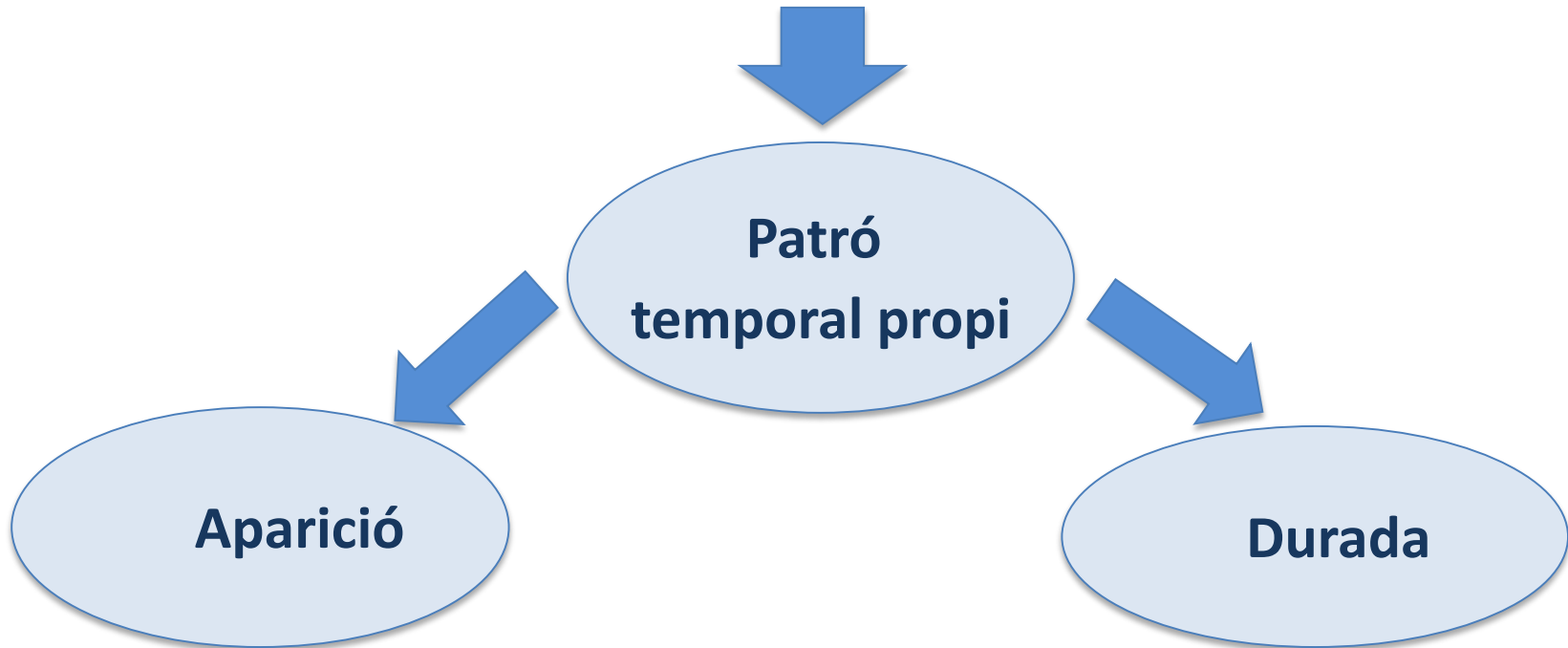


Ignasi Garcia Olivé

Servei de Pneumologia

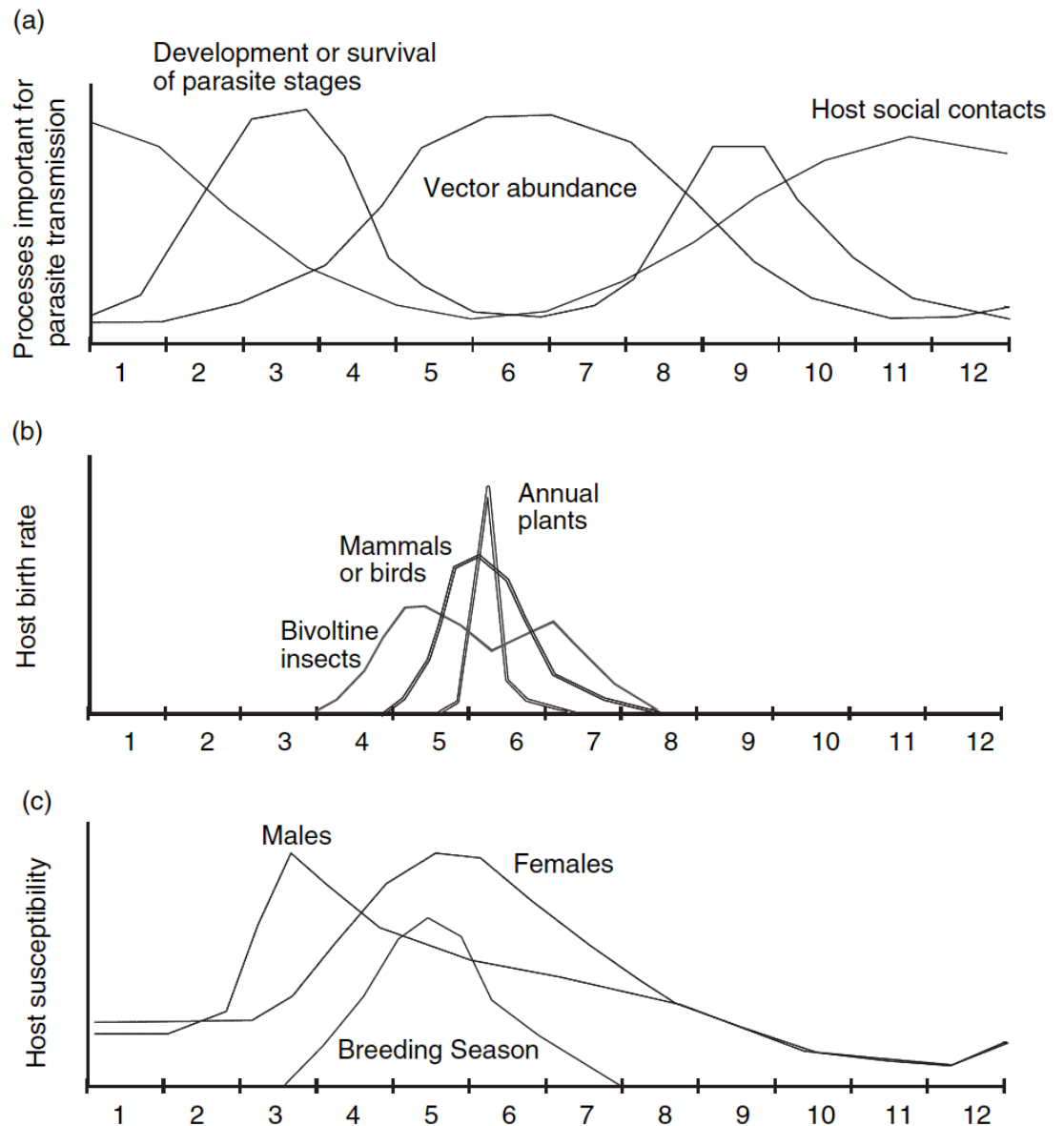
Hospital Universitari Germans Trias i Pujol

- Malalties amb presentació esporàdica
 - Poc freqüents
 - Irregular
- Diverses malalties presenten estacionalitat



Malalties infeccioses:

- Individus infectats
- Individus susceptibles
- Coeficient d'infectivitat



Estacionalitat



?

Idiopàtica

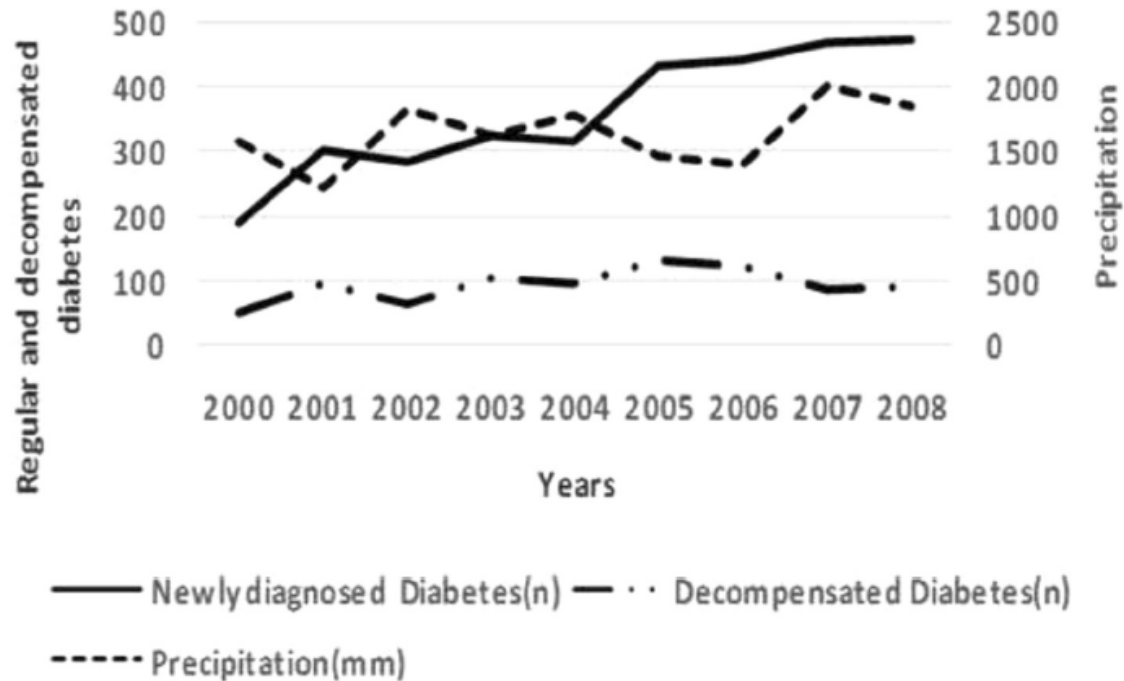
**Factors
ambientals**

Contaminants



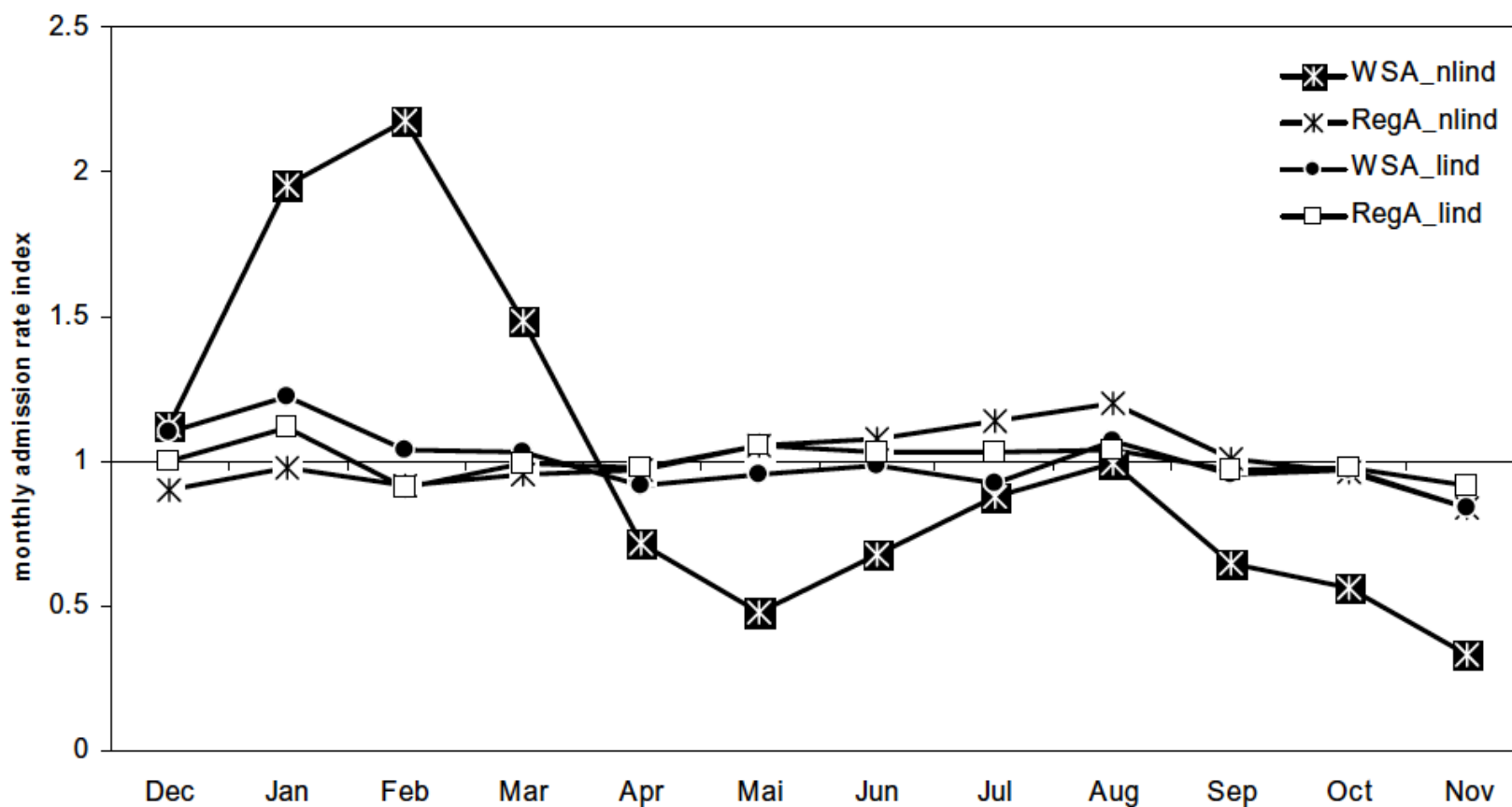


Seasonality in diabetes in Yaounde, Cameroon: a relation with precipitation and temperature



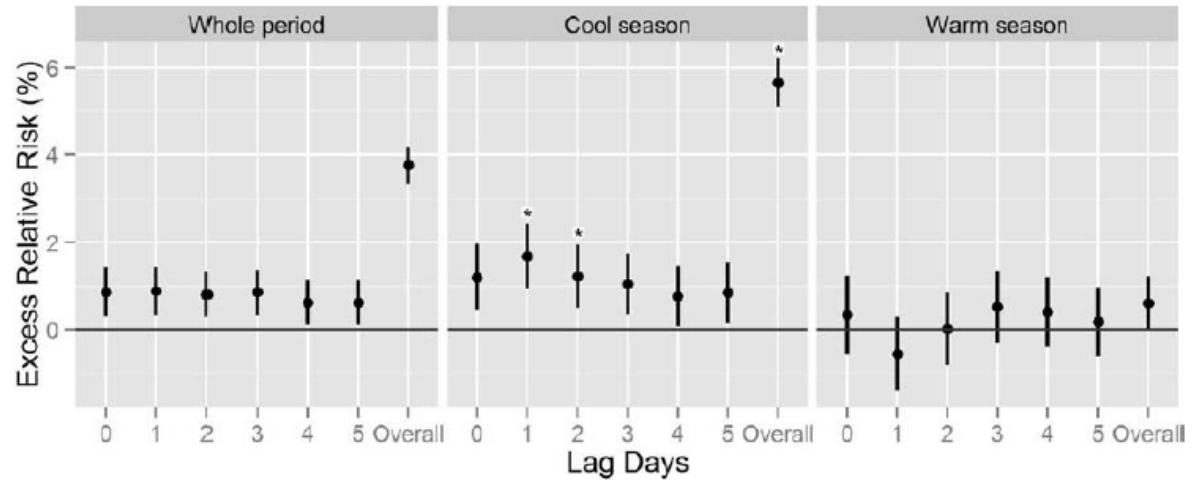
Seasonal variation in orthopedic health services utilization in Switzerland: The impact of winter sport tourism

Klazien Matter-Walstra[†], Marcel Widmer and André Busato^{*†}



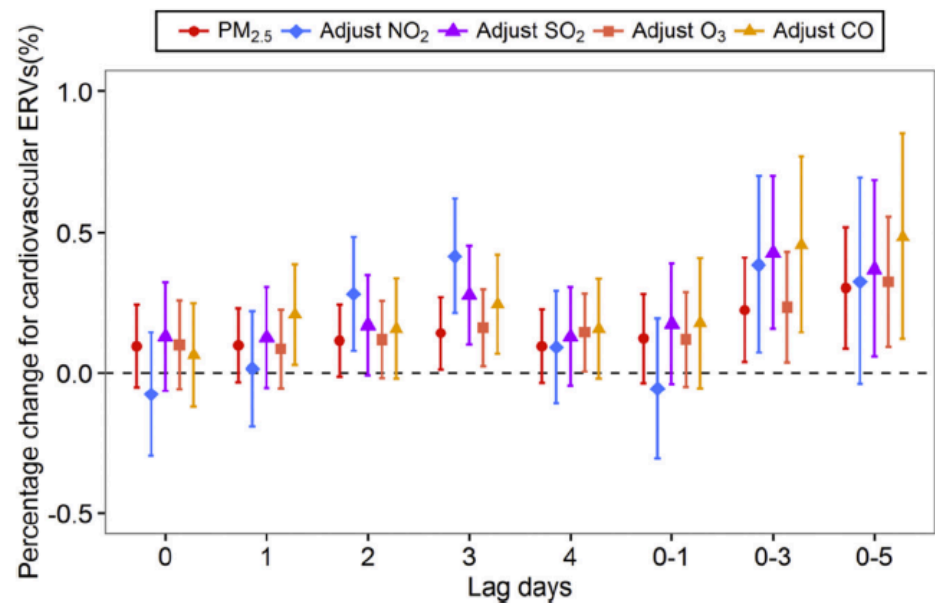
Insuficiència cardíaca

Temperatura



Qiu et al. Circ Heart Fail 2013

Contaminació



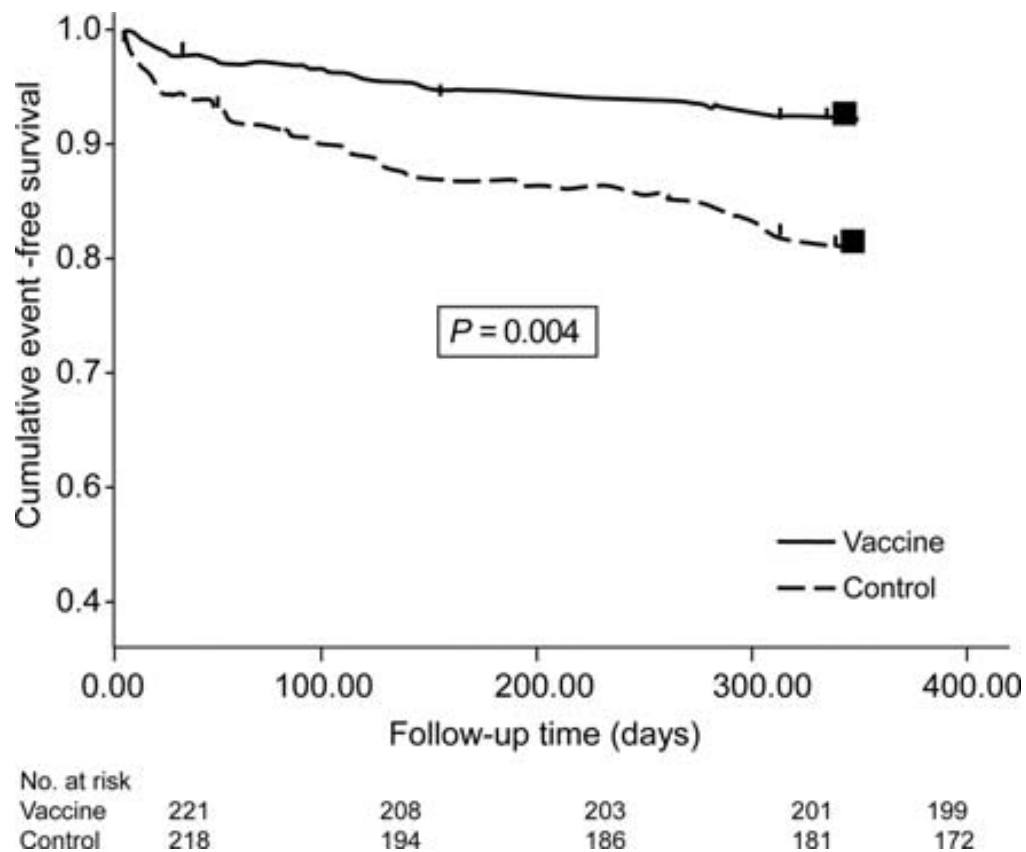
Xu et al. Environmental Pollution 2017

Cardiopatía isquémica

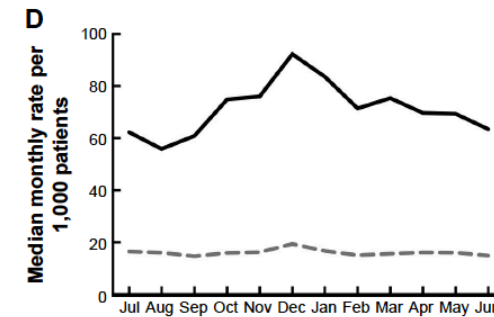
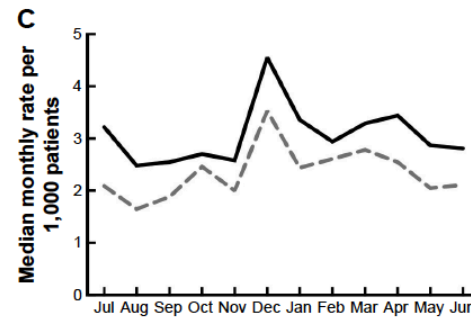
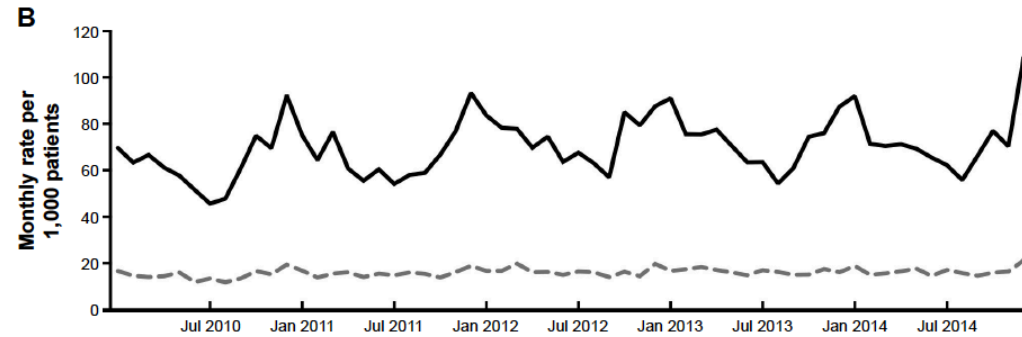
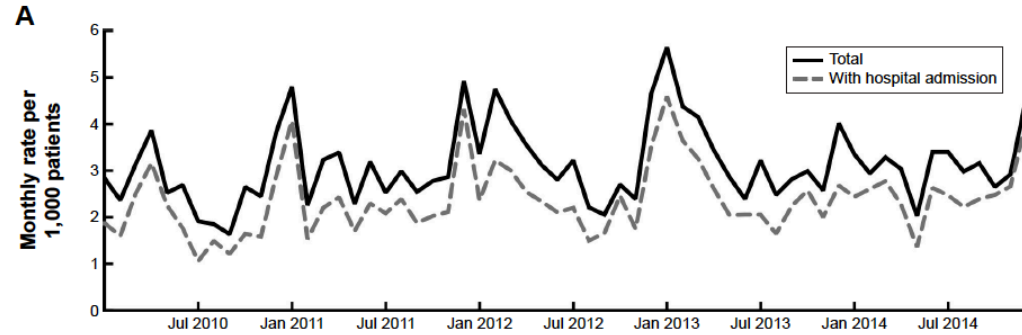
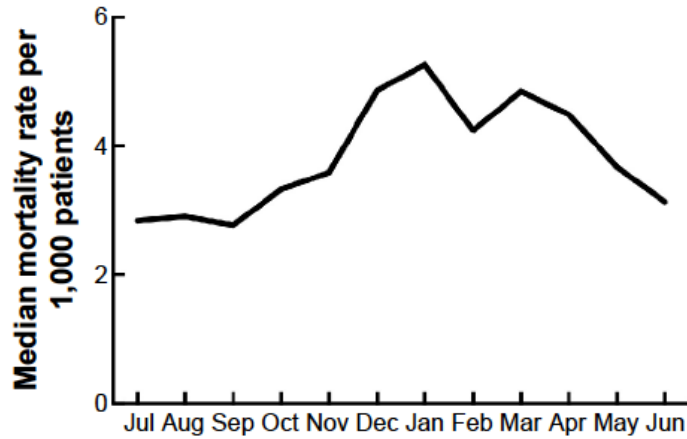
Influenza vaccination reduces cardiovascular events in patients with acute coronary syndrome

Arintaya Phrommintikul*, Srun Kuanprasert, Wanwarang Wongcharoen, Rungsrit Kanjanavanit, Romanee Chaiwarith, and Apichard Sukonthasarn

p



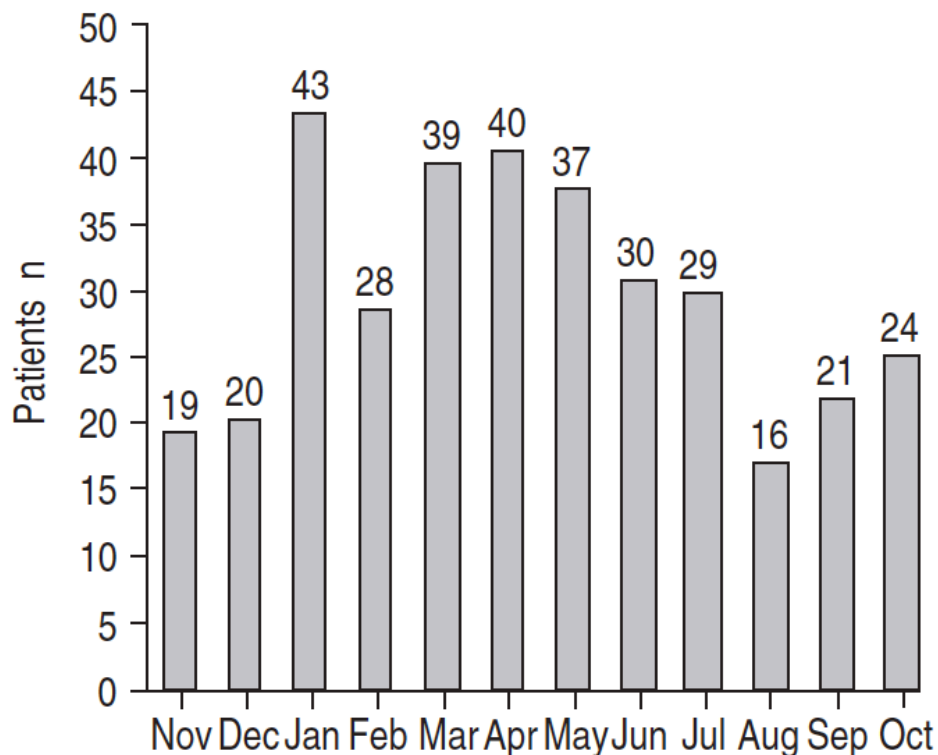
Seasonality, risk factors and burden of community-acquired pneumonia in COPD patients: a population database study using linked health care records



Seasonal variation in community-acquired pneumonia

Pneumonia

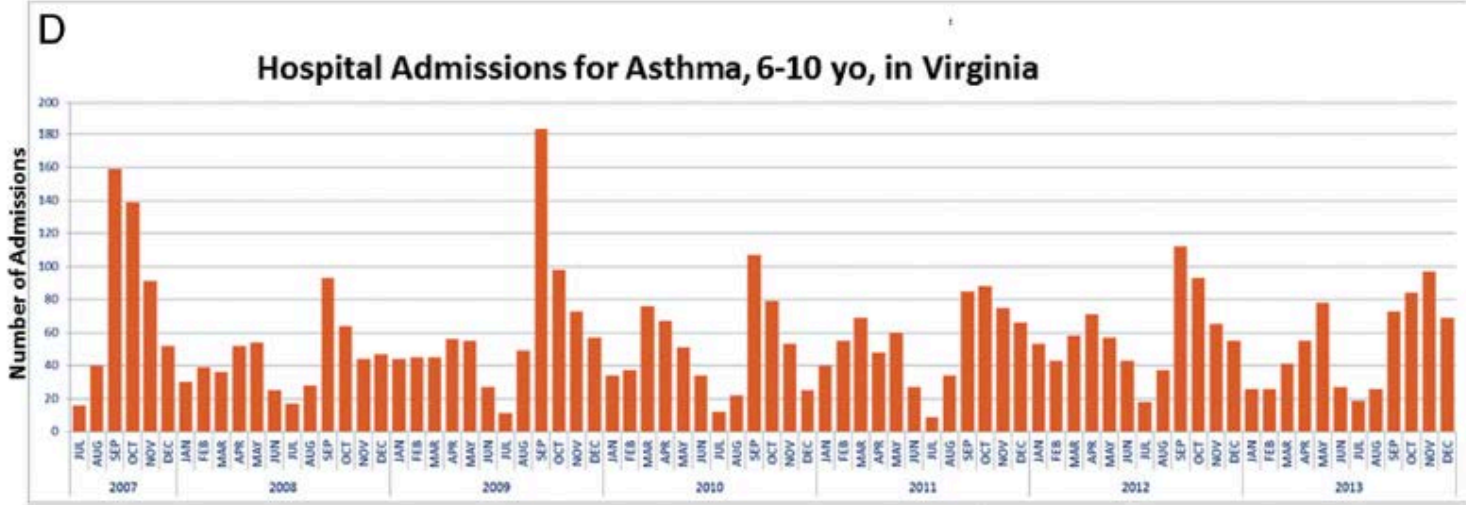
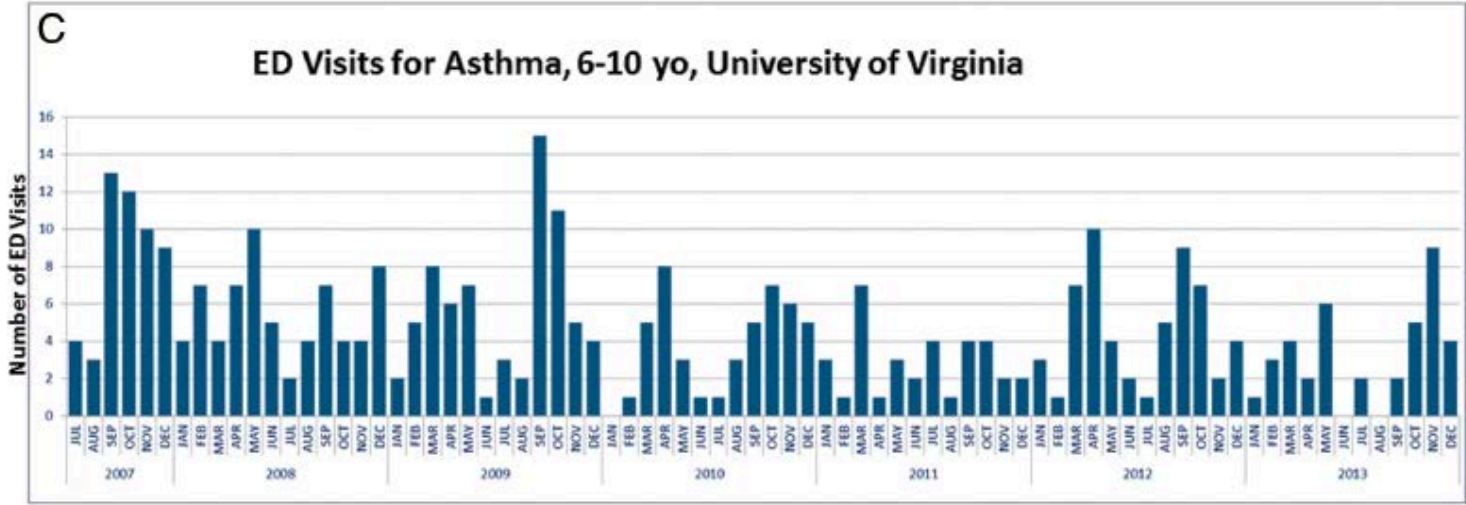
D. Lieberman*+, D. Lieberman+, A. Porath+



	n	Autumn %	Winter %	Spring %	Summer %	p-value*
Total CAP	346	18	26	34	22	0.036
<i>Pneumococcus</i>	148	25	20	34	21	0.292
<i>Mycoplasma pneumoniae</i>	101	19	15	41	25	0.054
<i>Chlamydia pneumoniae</i>	62	18	29	27	26	0.798
<i>Legionella</i> spp.	56	27	21	21	30	0.888
Respiratory viruses	35	3	49	37	11	0.009
Unknown aetiology	67	18	33	33	16	0.331

A comparison of seasonal trends in asthma exacerbations among children from geographic regions with different climates

Julia A. Wisniewski, M.D.,¹ Anne P. McLaughlin, M.D.,¹ Philip J. Stenger, M.S.,² James Patrie, M.S.,² Mark A. Brown, M.D.,⁴ Jane M. El-Dahr, M.D.,⁵ Thomas A.E. Platts-Mills, M.D., Ph.D.,¹ Nora J. Byrd, M.S.H.A., M.B.A.,⁶ and Peter W. Heymann, M.D.¹

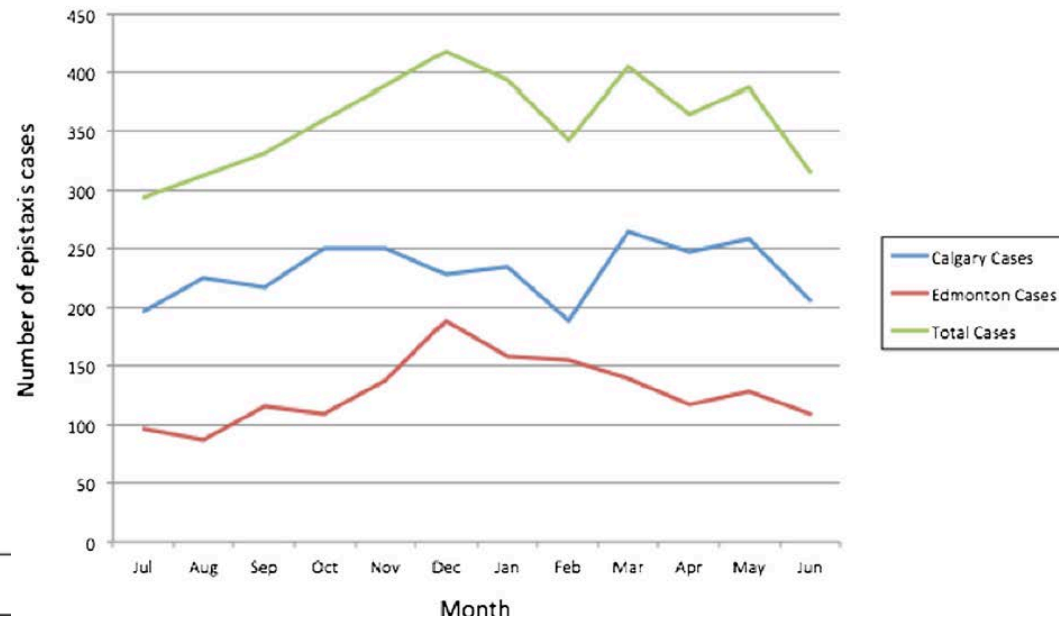
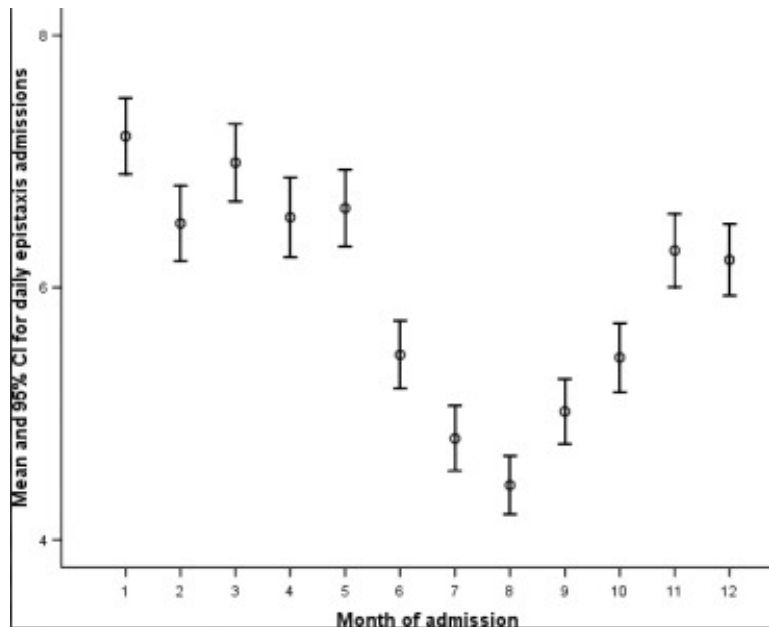


The epidemiology and chronobiology of epistaxis: an investigation of Scottish hospital admissions 1995–2004

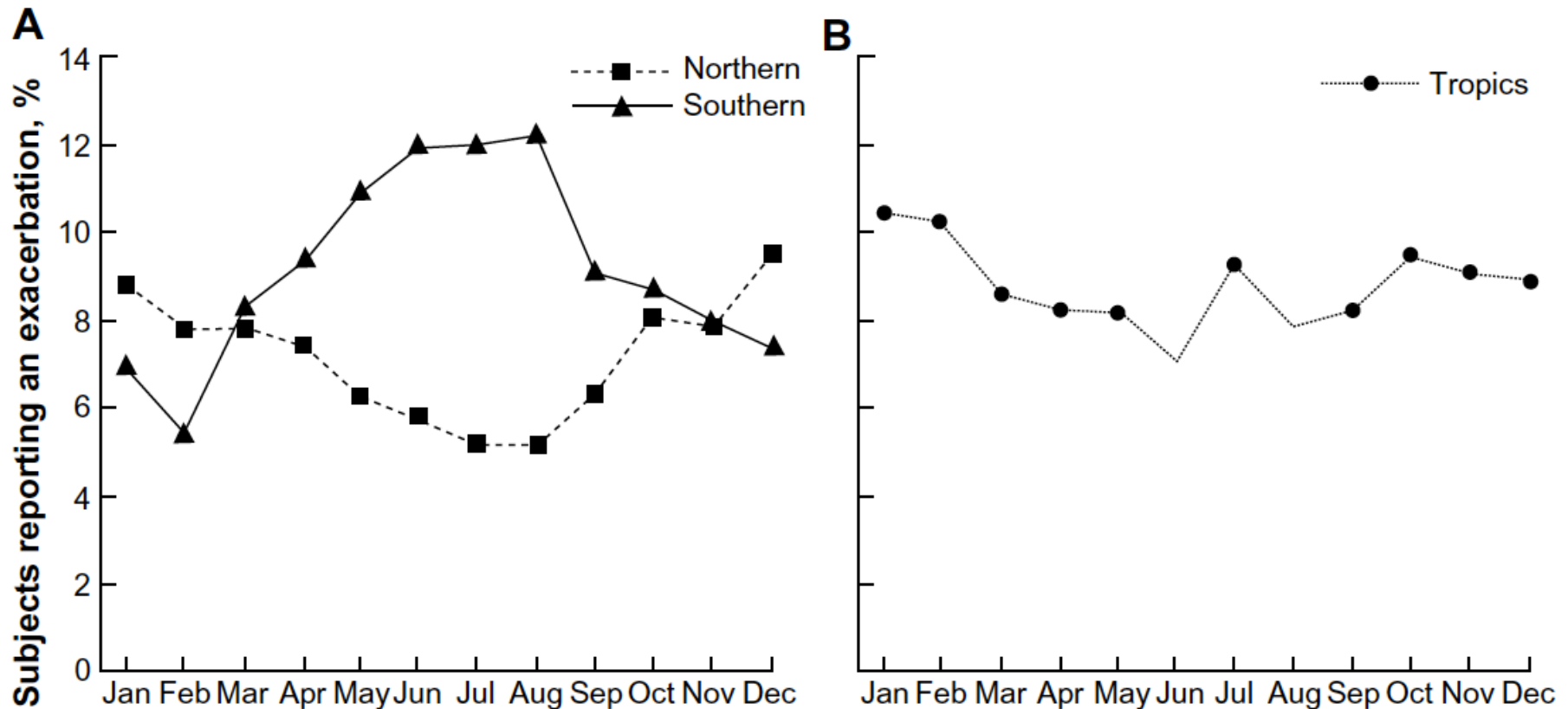
Walker, T.W.M.,* Macfarlane, T.V.,[†] & McGarry, G.W.[‡]

Role of season, temperature and humidity on the incidence of epistaxis in Alberta, Canada

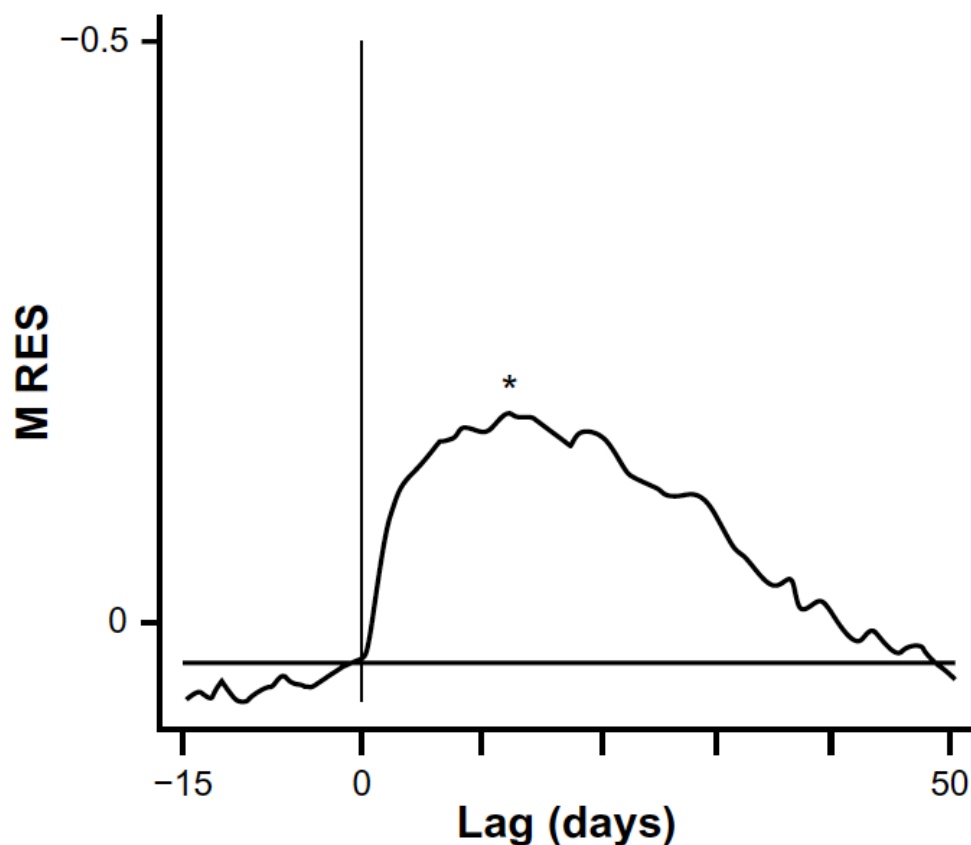
Leigh J Sowerby¹, Joshua J DeSerres², Luke Rudmik³ and Erin D Wright^{4,5*}



The causes and consequences of seasonal variation in COPD exacerbations



The causes and consequences of seasonal variation in COPD exacerbations

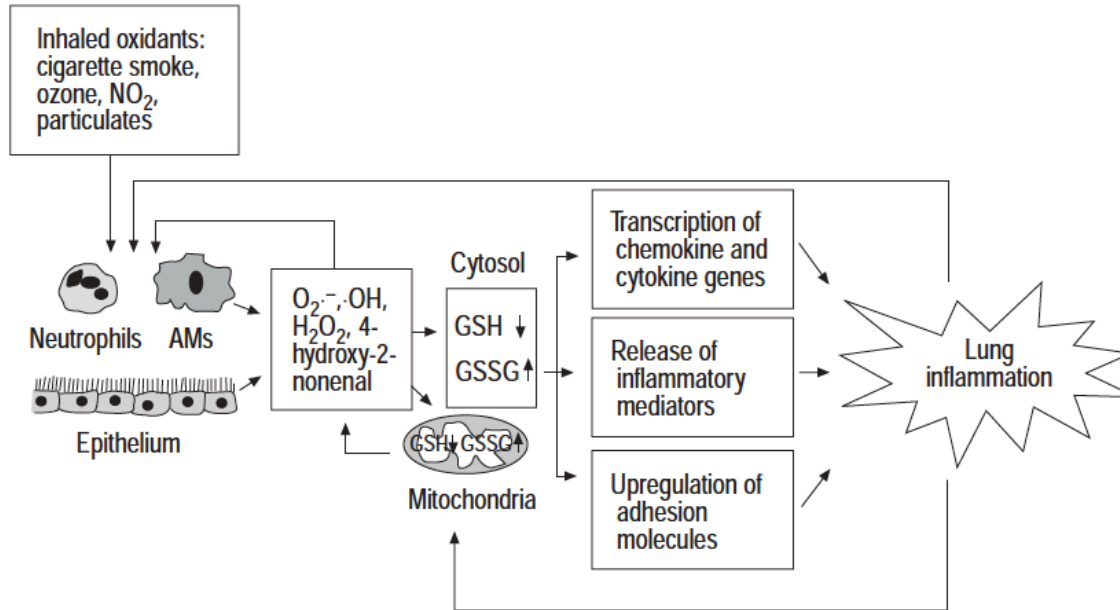


Increment de la mortalitat per descens d'1 °C

The causes and consequences of seasonal variation in COPD exacerbations

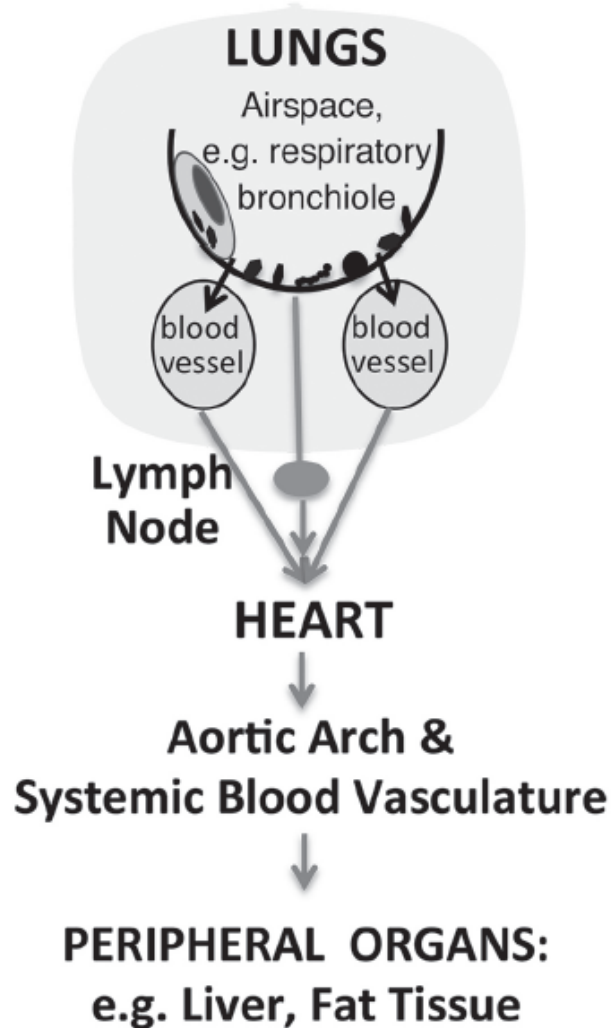
Table 1 Prevalence of respiratory viruses at COPD exacerbation

Respiratory virus	McManus et al ⁴⁹	Seemungal et al ⁵⁰	Beckham et al ⁵¹	Rohde et al ^{52,†}	Ko et al ⁴⁸
Exacerbations, n	136	168	194	85	262
Virus-positive exacerbations (%)	50 (36.8%)	66 (39.2%)	81 (41.8%)	48 (56.5%)	58 (22.1%)
Viruses detected, n	56	77	88	59	56
Human rhinovirus*	57%	50%	44%	36%	14%
Influenza A	5%	8%	16%	25%	32%
Influenza B	0	4%	2%	7%	11%
Corona	2%	9%	18%	0	21%
Parainfluenza	9%	1%	10%	10%	7%
Adenovirus	18%	1%	1%	0	2%
RSV	6%	25%	8%	22%	11%
Metapneumovirus	4%	1%	0	0	2%



- Ozó: increment neutròfils, HRB, pèrdua f(x)
- Tabac: oxidants, radicals lliures
- NO₂ i SO₂: oxidants
- PM₁₀: citocines inflammatòries

Contaminació



Disseminació partícules /
Productes PM10

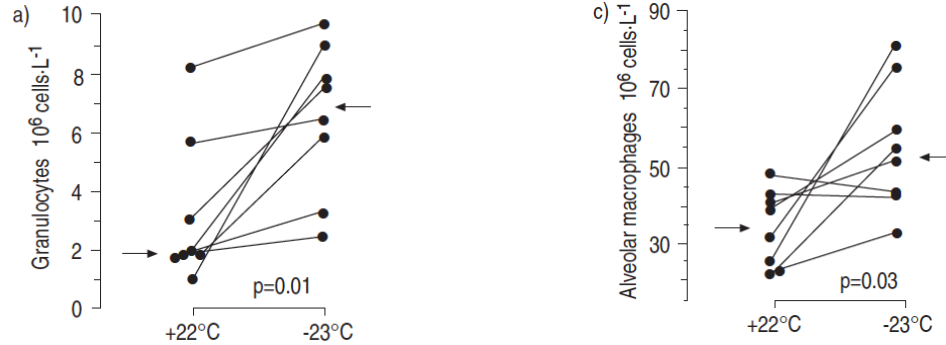


Macròfags / Citocines



Afectació cor dret /
esquerre / vasculatura
pulmonar

Increment cèls. inflammatòries



Increment citocines

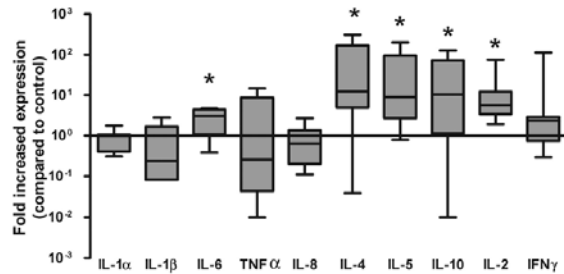
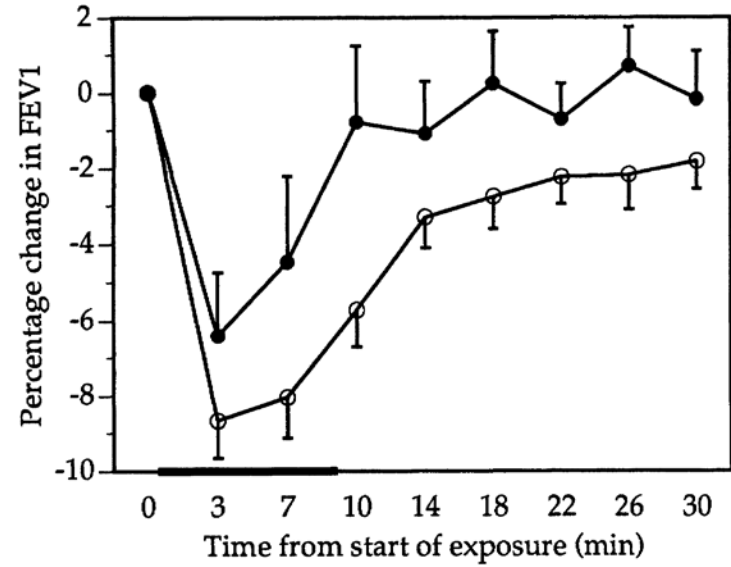


Table 2 Cough Symptoms at Exercise for each Season

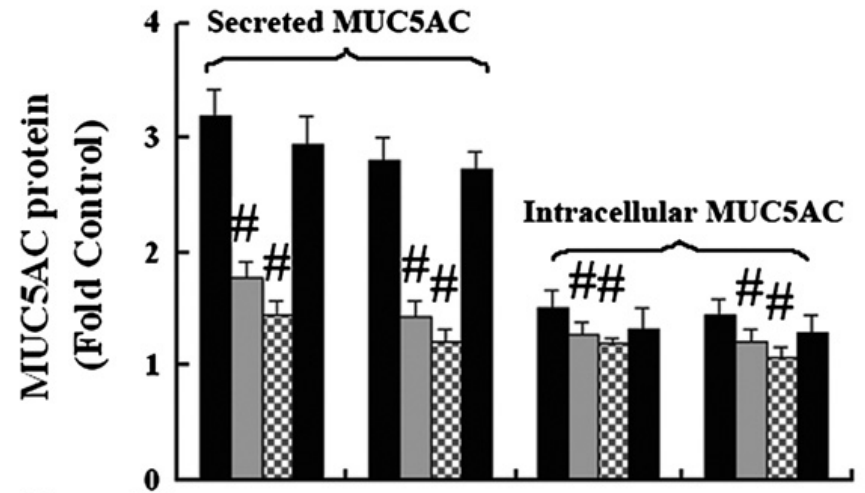
	Summer	Fall	Winter	*p-value
Athletes	n = 31	n = 37	n = 23	0.45
During exercise	9%	18%	18%	0.04†
Within 1 h after exercise	44%	54%	71%	0.99
Between 2 and 8 h after exercise	24%	21%	21%	
Non-athlete subjects	n = 19	n = 8	n = 17	0.99
During exercise	11%	0%	12%	0.99
Within 1 h after exercise	16%	3%	18%	0.47
Between 2 and 8 h after exercise	0%	0%	6%	
**p-value				
During exercise	0.06	0.31	0.06	
Within 1 h after exercise	0.49	0.02	0.06	
Between 2 and 8 h after exercise	0.99	1.00	0.16	

Increment de la tos

Broncoespasme



Hipersecreció mucosa





- Emissió sang provinent via aèria
- Greu
 - Mortalitat (12%)
 - Recidiva (15-20%)
- Causa
 - Idiopàtica
 - Bronquièctasis
 - Bronquitis crònica
 - Neoplàsia de pulmó
 - Infeccions
 - Altres

- Infecció respiratòria
 - Johnston et al. BMJ (1960)
 - Lewis et al. Thorax (1982)
- Èpoques amb pneumònia o grip
 - Smidt. Acta Otolaryngol (1957)

Section of Epidemiology and State Medicine.

President—Dr. S. MONCKTON COPEMAN, F.R.S.

Hemoptisi

[March 23, 1928.]

Season and Disease.

By C. O. STALLYBRASS, M.D., D.P.H.

Statistical Review for 1925. From this it will be seen that general mortality follows temperature with a lag period of about one month, respiratory disease, or respiratory complications in chronic diseases, being the predominant factor; other results such as the effect of cold in precipitating hæmorrhage in the arteriosclerotic or the phthisical also increase the mortality. Smiley [9] sums up the evidence in these words:

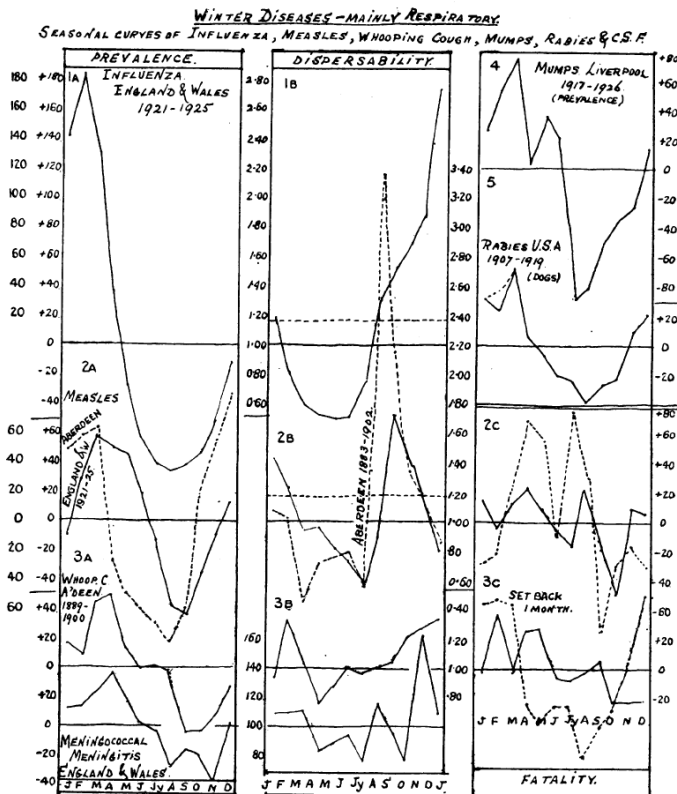


DIAGRAM III.

Exposure to Nitrogen Dioxide in an Indoor Ice Arena — New Hampshire, 2011

Gener 2011- Departament Sanitat New Hampshire



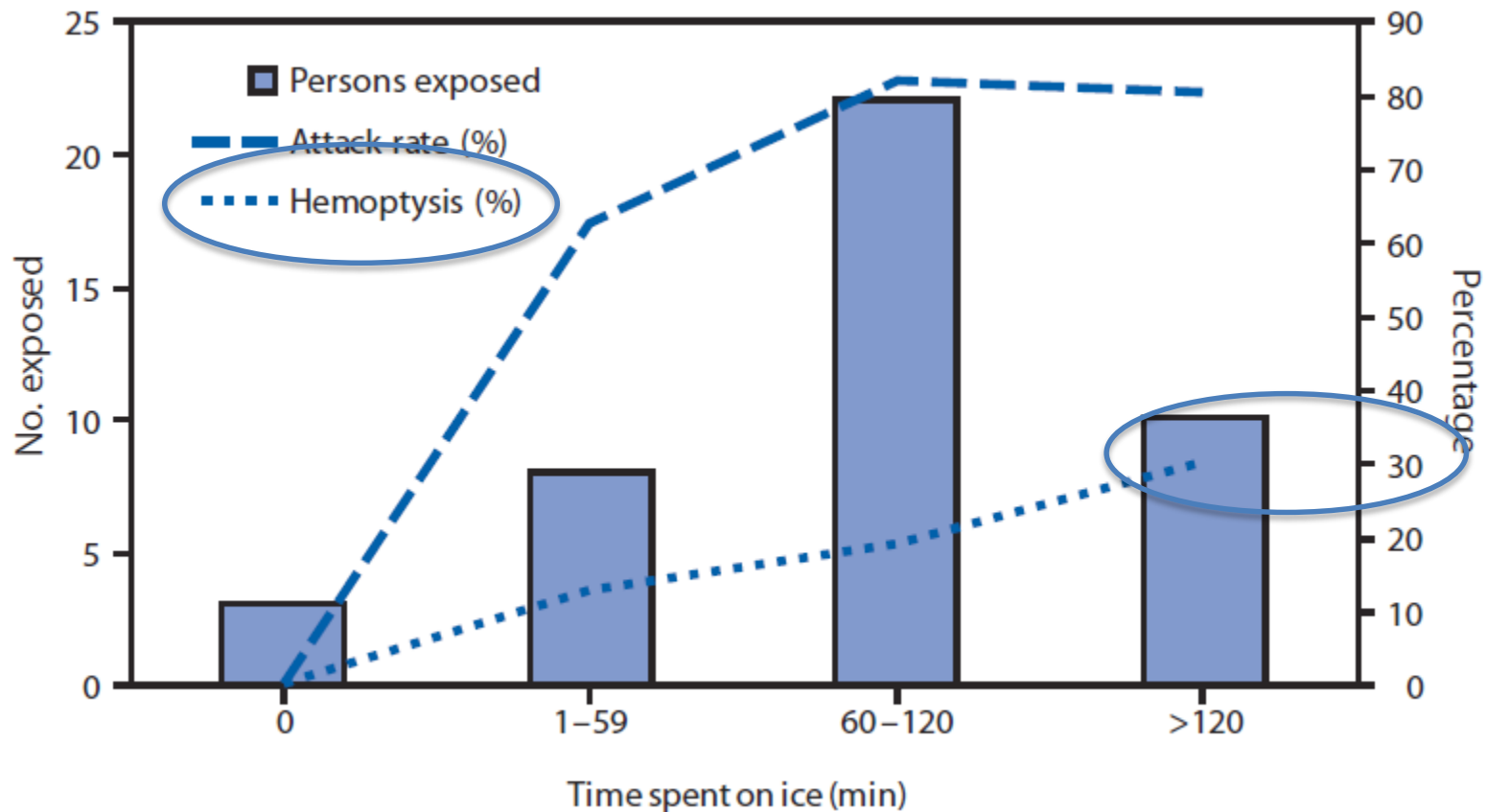
TABLE 1. Number and percentage of persons with symptoms consistent with exposure to nitrogen dioxide gas (NO₂) in an indoor ice arena (N = 31) — New Hampshire, January 3, 2011

Symptom	No.	(%)
Cough	26	(83.9)
Shortness of breath	24	(77.4)
Chest tightness	20	(64.5)
Chest pain	14	(45.2)
Weakness	11	(35.5)
Sore throat	11	(35.5)
Nausea/Vomiting	10	(32.3)
Hemoptysis/Bloody sputum*	8	(25.8)
Throat irritation	8	(25.8)
Headache	8	(25.8)
Abdominal pain	6	(19.4)
Eye irritation	5	(16.1)
Dizziness	1	(3.2)
Choking	1	(3.2)

- Exposició accidental nivells elevats NO₂
- Al pavelló es monitoritzava CO i CO₂
- Els efectes clínics van durar fins a 4 setmanes

* Includes two persons with late-onset hemoptysis reported at follow-up survey.

Exposure to Nitrogen Dioxide in an Indoor Ice Arena — New Hampshire, 2011



Seasonal Variation in Cryptogenic and Noncryptogenic Hemoptysis Hospitalizations in France

Fabrice Boulay, Frédéric Berthier, Olivier Sisteron, Yves Gendreike and Bruno Blaive

- Estudi retrospectiu (1994-1997)
- 29 hospitals universitaris de França
- 2677 hemoptisi criptogènica i 3672 d'etiologia coneguda
- Dades mensuals
- Definició de cas: CIM-9

Seasonal Variation in Cryptogenic and Noncryptogenic Hemoptysis Hospitalizations in France

Fabrice Boulay, Frédéric Berthier, Olivier Sisteron, Yves Gendreike and Bruno Blaive

- Càncer de pulmó (n=949; 14.9%)
- Bronquièctasis (n=558; 8.8%)
- Bronquitis crònica (n=543; 8.6%)
- Infecció/pneumònia (n=427; 6.7%)
- Altres

Table 1—Hospitalizations for Cryptogenic Hemoptysis and Noncryptogenic Hemoptysis From July 1994 Through June 1997, Numbers, and Seasonal Variation for All Cases, by Sex and by Age

Variables	Cryptogenic						Noncryptogenic
	All	Sex		Age, yr			
		Men	Women	16–34	35–64	≥ 65	
Hospitalizations, No.	2,677	1,918	759	514	1,437	726	3,672
%	100.0	71.6	28.4	19.2	53.7	27.1	—
Seasonal variation*							
January	11	15	2	5	17	4	21
February	12	12	10	29	7	8	19
March	32	35	24	42	29	31	14
April	20	15	31	23	16	24	16
May	–2	–2	–2	5	–4	–4	–1
June	8	5	15	–12	23	–8	7
July	–23	–20	–30	–31	–26	–9	–14
August	–30	–32	–22	–43	–29	–22	–28
September	–23	–26	–15	–41	–20	–18	–18
October	–6	–8	–1	1	–5	–12	–7
November	0	–1	3	25	–11	4	–5
December	3	9	–13	–2	4	4	–1
Total seasonal variation†	62	67	61	85	58	53	49
Roger's test	<u>< 0.001</u>	< 0.001	< 0.01	< 0.001	< 0.001	< 0.01	<u>< 0.001</u>

*Percent above or below the average monthly value for the entire study period.

†Sum of the percentage above the average for the month with the highest value and the percentage below the average for the month with the lowest value.

Estacionalitat

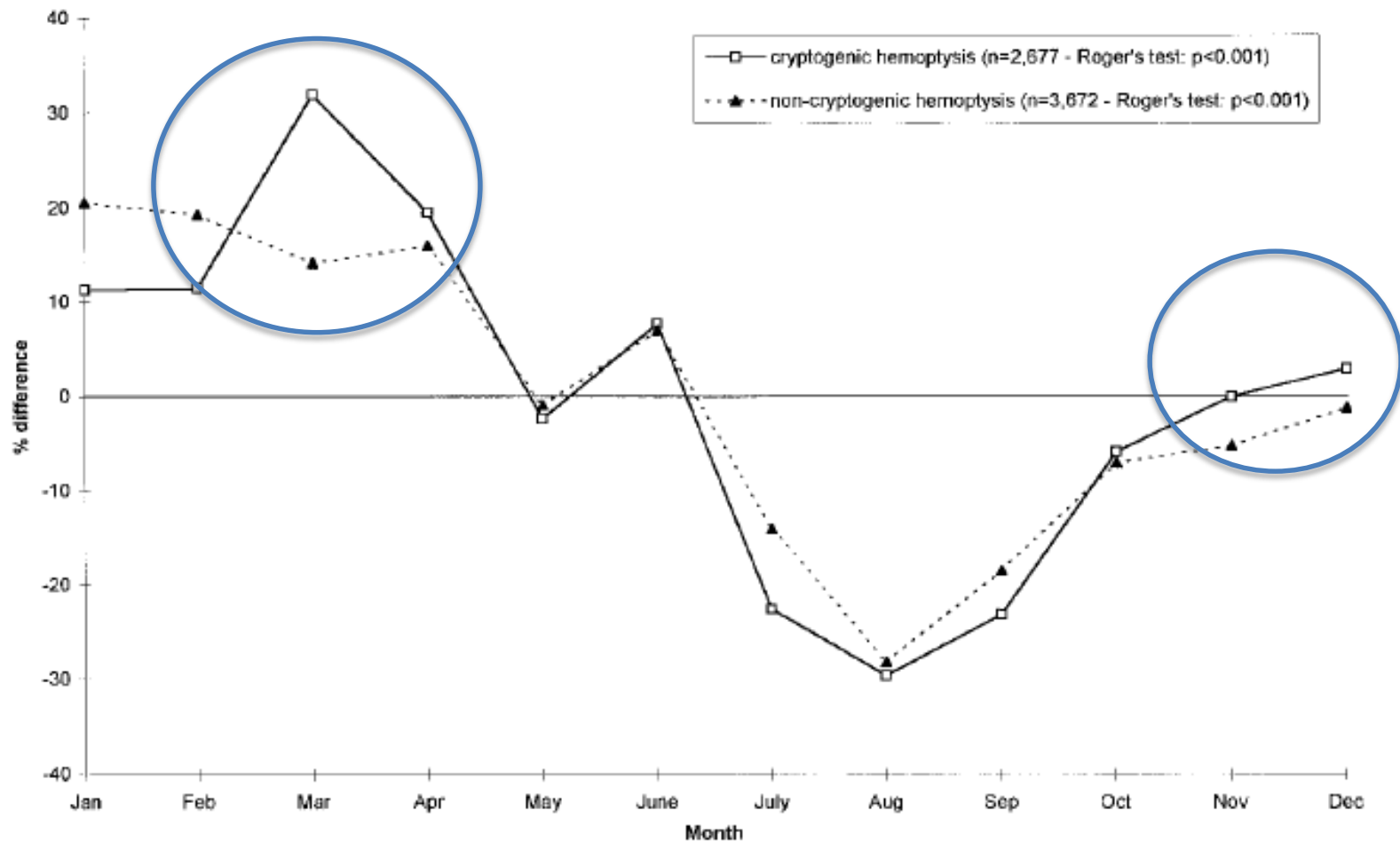


FIGURE 1. Monthly percent variations in hospitalizations for cryptogenic hemoptysis and for noncryptogenic hemoptysis. The reference value, which is the average monthly value, is 0%. Data points represent cumulative data from July 1994 through June 1997.

ORIGINAL RESEARCH ARTICLE

Open Access

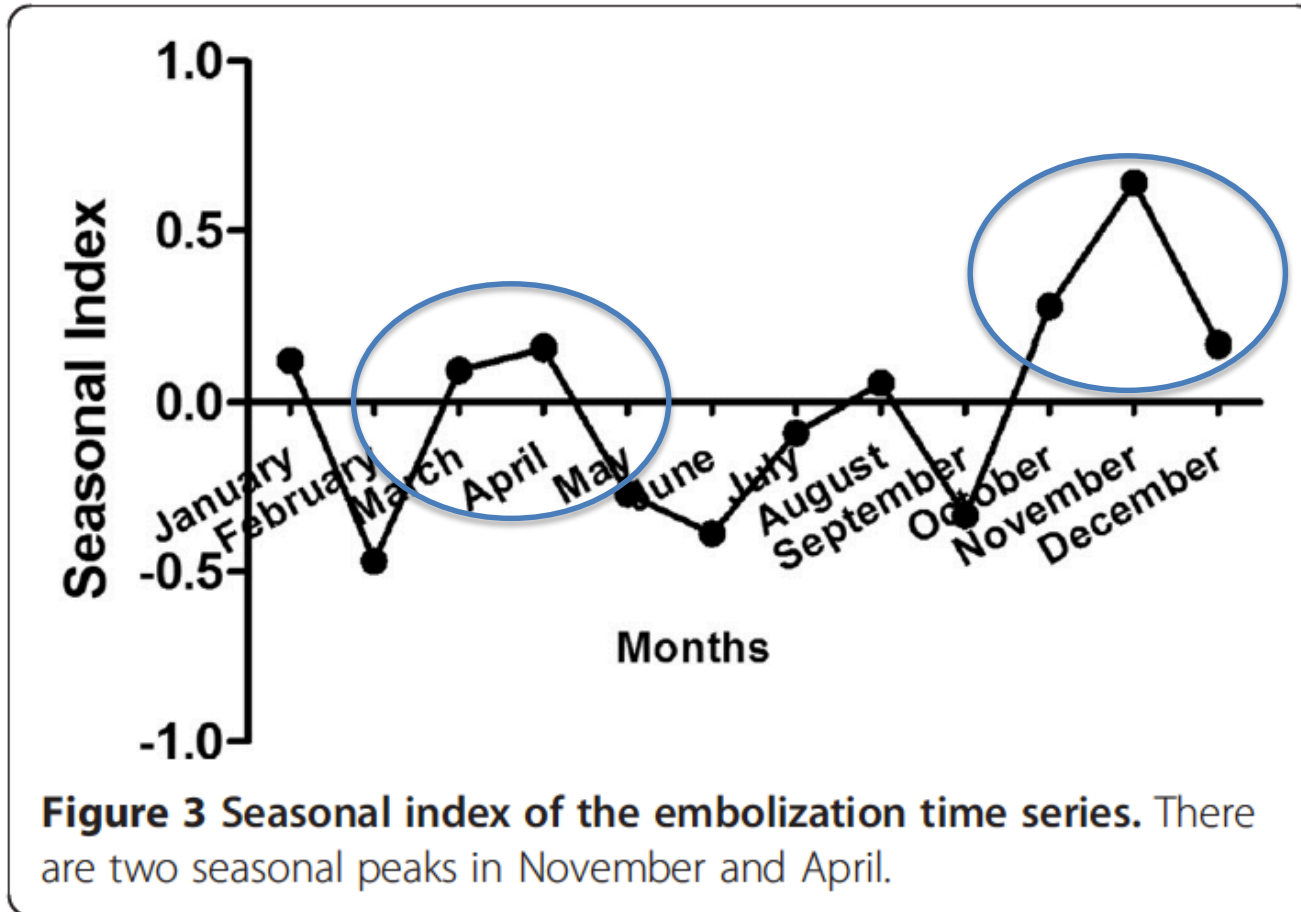
Temporal patterns in severe hemoptysis requiring bronchial artery embolization

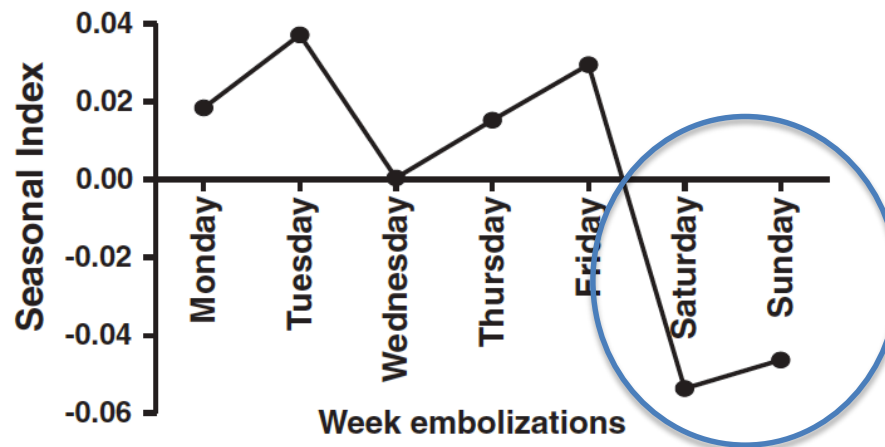
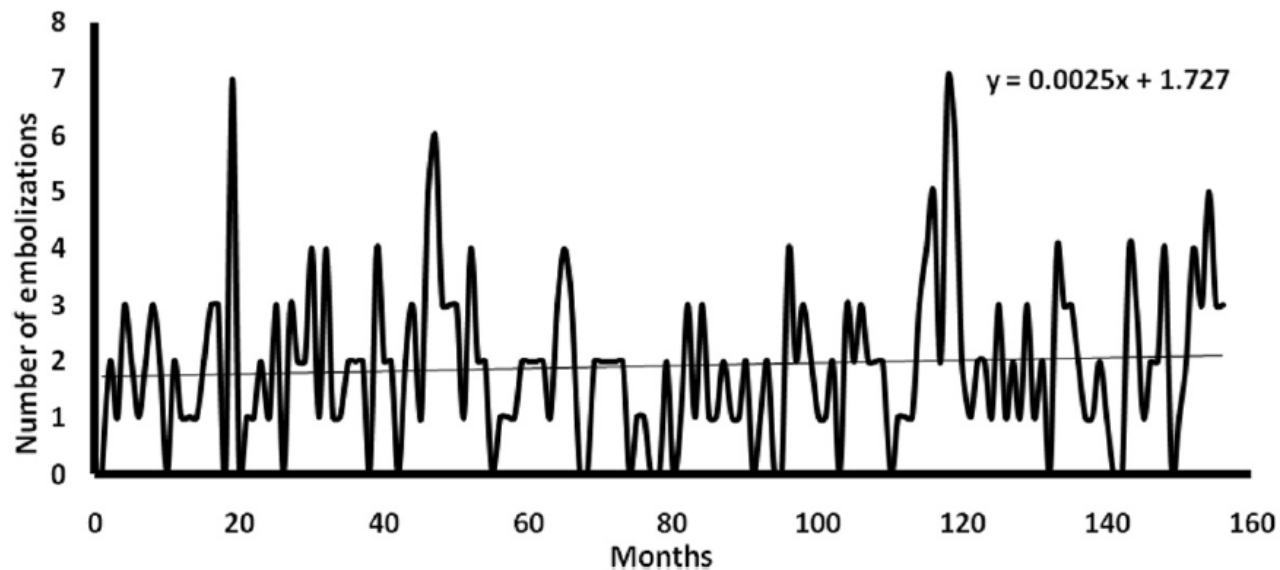
Ignasi Garcia-Olivé^{1,2,3*}, Jose Antonio Fiz¹, Jose Sanz-Santos^{1,3}, Felipe Andreo^{1,2,3}, Estefanía Sánchez-Martínez¹,
Jaume Sampere⁴, Jordi Muchart⁴, Josep Maria Michavila⁴ and Juan Ruiz-Manzano^{1,2,3,5}

- Estudi retrospectiu (1999-2011)
- Hospital Germans Trias i Pujol
- Dades mensuals
- Definició de cas: embolitzats per hemoptisi

Table 1 Characteristics of the patients included in the study

Age (years)	
Mean (SD)	58.6 (15)
Sex (n, (%))	
Male	190 (74)
Female	67 (26)
Pathological condition [n (%)]	
Bronchiectasis	85 (33)
Cancer	57 (22)
COPD	51 (20)
Active tuberculosis	15 (6)
Idiopathic	49 (19)
Embolizations per patient [n(%)]	
1	221 (86)
2	28 (11)
3	6 (2.2)
4	0 (0)
5	1 (0.4)
6	1 (0.4)





Association of Influenza-Like Illness and Climatic Parameters With Hemoptysis

Ignasi Garcia-Olivé MD, Jose A Fiz MD PhD, Jose Sanz-Santos MD,
Carlos Martínez-Rivera MD, Marisol Prats MD, and Juan Ruiz-Manzano MD

- Estudi retrospectiu (2007-2011)
- Hospital Germans Trias i Pujol
- Dades mensuals
- Definició de cas: embolitzats per hemoptisi
- Exclusió: pacients fora de l'àrea
- Activitat grip
- Dades climàtiques

Association of Influenza-Like Illness and Climatic Parameters With Hemoptysis

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Activitat grip

- Cerques a internet (Google Flu Trends)

Dades climàtiques

- Temperatura
- Pressió atmosfèrica
- Pluviositat
- Humitat relativa
- Velocitat vent



Monitoring Influenza Activity in the United States: A Comparison of Traditional Surveillance Systems with Google Flu Trends

Justin R. Ortiz^{1*}, Hong Zhou^{2,3}, David K. Shay², Kathleen M. Neuzil⁴, Ashley L. Fowlkes², Christopher H. Goss¹

RAPID COMMUNICATIONS

Monitoring influenza activity in Europe with Google Flu Trends: comparison with the findings of sentinel physician networks – results for 2009-10

A Valdivia (tonyvald@hotmail.com)¹, J López-Alcalde², M Vicente³, M Pichlule⁴, M Rulz⁵, M Ordobas⁶

1. Preventive Medicine Unit, Hospital de Dénia (Marina Salud), Dénia, Spain

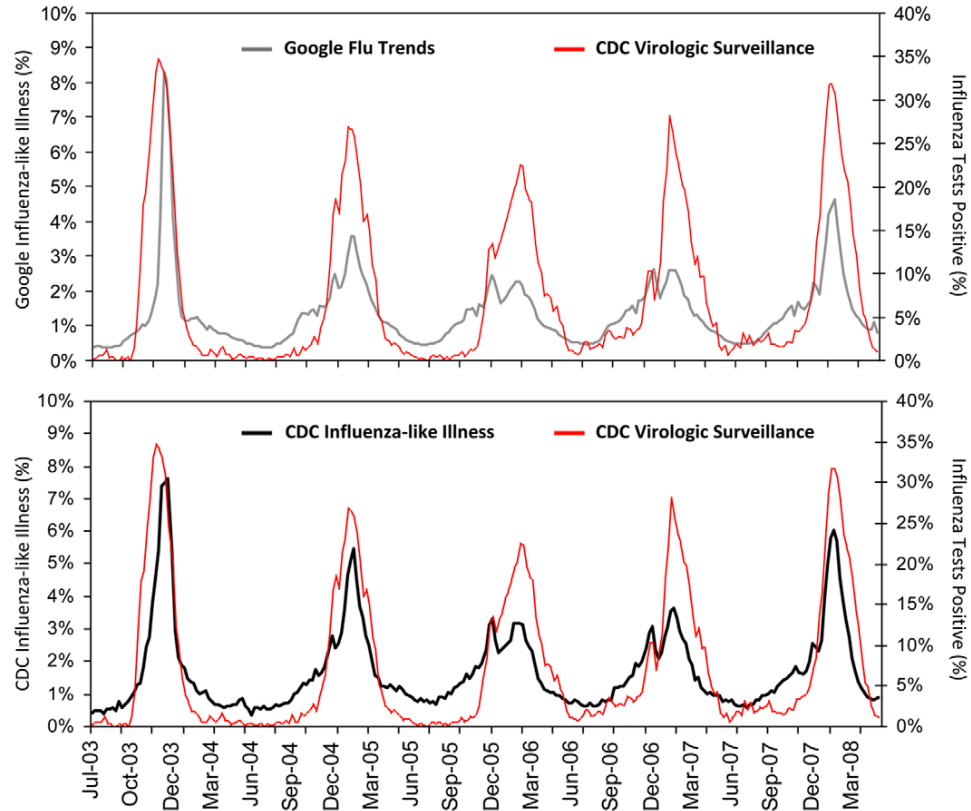
2. Health Technology Assessment Unit, Agencia Laín Entralgo, Madrid, Spain

3. Primary Health Care, Area 8, Madrid, Spain

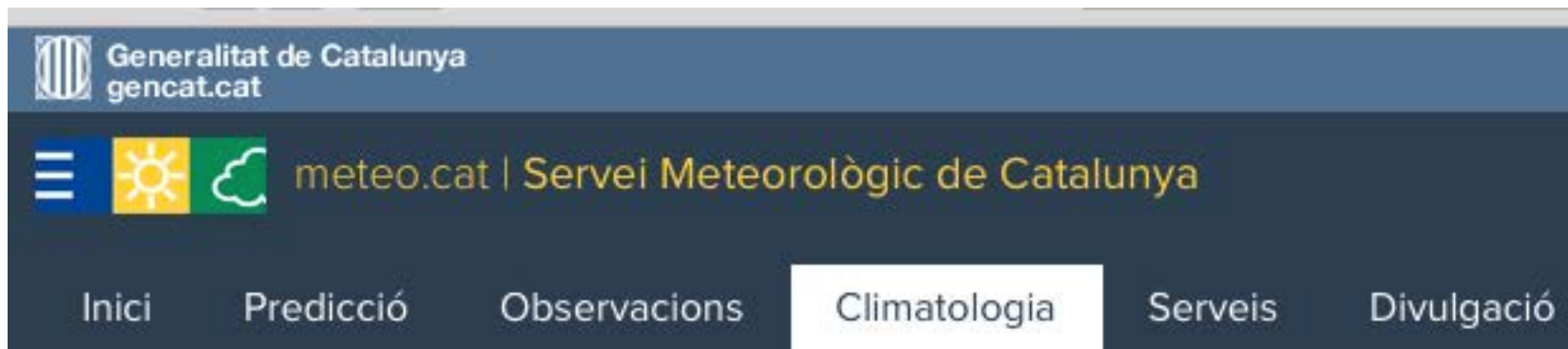
4. Preventive Medicine Service, Hospital Universitario de La Princesa, Madrid, Spain

5. Primary Health Care, Area 11, Madrid, Spain

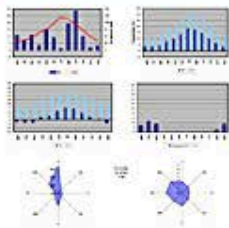
6. Epidemiology Service, General Subdirection for Health Promotion and Prevention, Madrid, Spain



Dataset	Google Flu Trends	CDC ILI	CDC Virologic
Google Flu Trends	1.00	--	--
CDC ILI	0.94 (0.92, 0.96)	1.00	--
CDC Virologic	0.72 (0.64, 0.79)	0.85 (0.81, 0.89)	1.00
CDC Virologic plus One Week	0.69 (0.60, 0.76)	0.79 CI: 0.72, 0.84	--
CDC Virologic plus Two Weeks	0.66 (0.56, 0.74)	0.75 (0.68, 0.81)	--



Serveis i dades climàtiques



Anuari de dades

Dades mesurades a la Xarxa d'Equipaments Meteorològics de l'SMC recollides en forma d'anuari



Sèries climàtiques històriques

Opció de descàrrega de les sèries climàtiques mensuals de temperatura i precipitació des de 1950



Peticions de dades

Accés a la sol·licitud de dades meteorològiques de temps passat



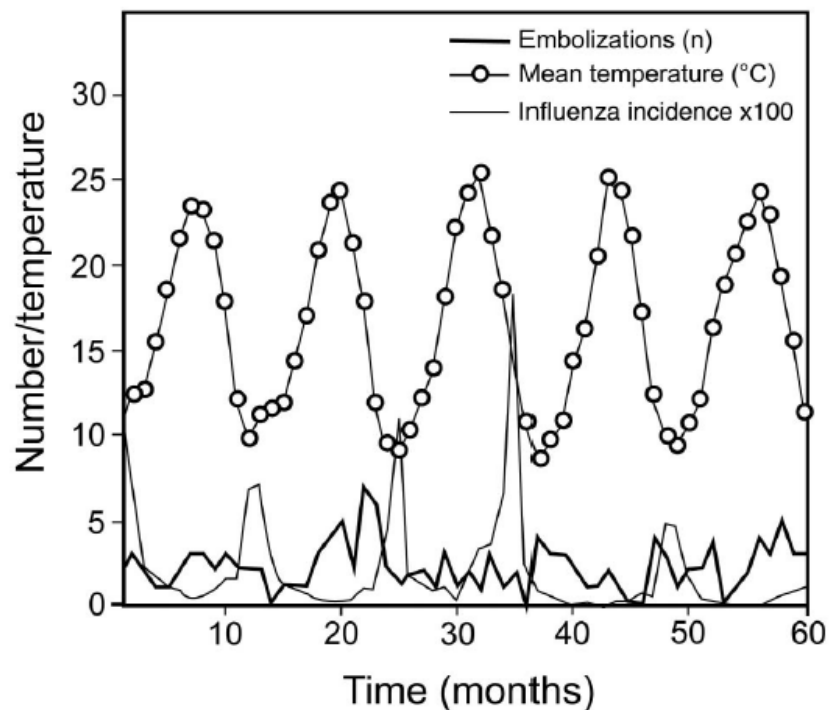
Sèrie climàtica de Barcelona des de 1780

Accés a les dades de temperatura i precipitació mensuals



Table 3. Multivariable Lagged Variable Autoregressive Model Among Embolizations, Mean Temperature, and Influenza Activity

	Coefficient \pm SE	P
C	1.83 \pm 0.98	.07
Log (mean temperature)	-1.49 \pm 0.54	.01
Log (mean temperature (-1))	1.44 \pm 0.46	.00
Log (influenza activity)	-0.197 \pm 0.08	.02
AR (1)	0.03 \pm 0.16	.83



- No significació:
 - Pressió atmosfèrica
 - Humitat relativa
 - Precipitacions
 - Velocitat del vent
- Significació estadística:
 - Baixa temperatura
 - Baixa temperatura mes previ
 - Activitat grip



ORIGINAL ARTICLE

Association between air pollution and hemoptysis

Ignasi Garcia-Olivé PhD^{1,2,3}, Joaquim Radua PhD^{4,5,6}, Jose Antonio Fiz PhD¹,
Jose Sanz-Santos PhD^{1,3}, Juan Ruiz-Manzano PhD^{1,2,3,7}

I Garcia-Olivé, J Radua, JA Fiz, J Sanz-Santos, J Ruiz-Manzano.
Association between air pollution and hemoptysis. *Can Respir J*
2015;22(X):1-4.

- Estudi retrospectiu (2007-2011)
- Hospital Germans Trias i Pujol
- Dades mensuals
- Definició de cas: embolitzats per hemoptisi
- Exclusió: pacients fora de l'àrea
- Contaminants: SO₂, NO, NO₂, O₃, CO, PM₁₀

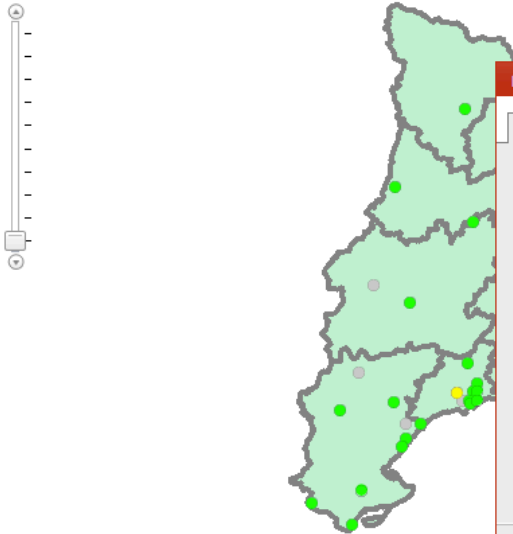
→ Geoinformació → Dades de qualitat de l'aire

Filtres ICQA Pronòstic Google Earth Estacions



Dades de les estacions automàtiques (dades pendents de validació)

Filtres seleccionats:



Bàsic

Badalona (Mont-roig - Ausiàs March) ✕

Fitxa
Dades actuals
Gràfics/Taula
Dades històriques

Informació general

Codi EOI: 08015021

Nom: Badalona (Mont-roig - Ausiàs March)

Data instal·lació: 05/12/2008

Coord. UTM (m): 436430 , 4588530

Altitud (m): 7


Adreça postal: Av. del Marquès de Mont-roig - c. d'Ausiàs March

Municipi: Badalona


Tipus àrea: Urbana, Fons

Contaminants: NO-Monòxid de nitrogen (analitzador automàtic)
 (mesurats actualment) NOx-Òxid de nitrogen totals (analitzador automàtic)
 NO2-Diòxid de nitrogen (analitzador automàtic)
 O3-Ozó (analitzador automàtic)

Fotografia d'estació



Situació a Google Maps



Informació Mapa

Capes del mapa

Zones de qualitat Automàtiques

Zones de protecció Manuals

Municipis Estacions de baixa

Simbologia d'estacions

Auto Manual Baixa

Qualitat de l'aire [?]

● Pobra ● Regular ● Bona ● Sense dades

Nombre d'estacions

● 0

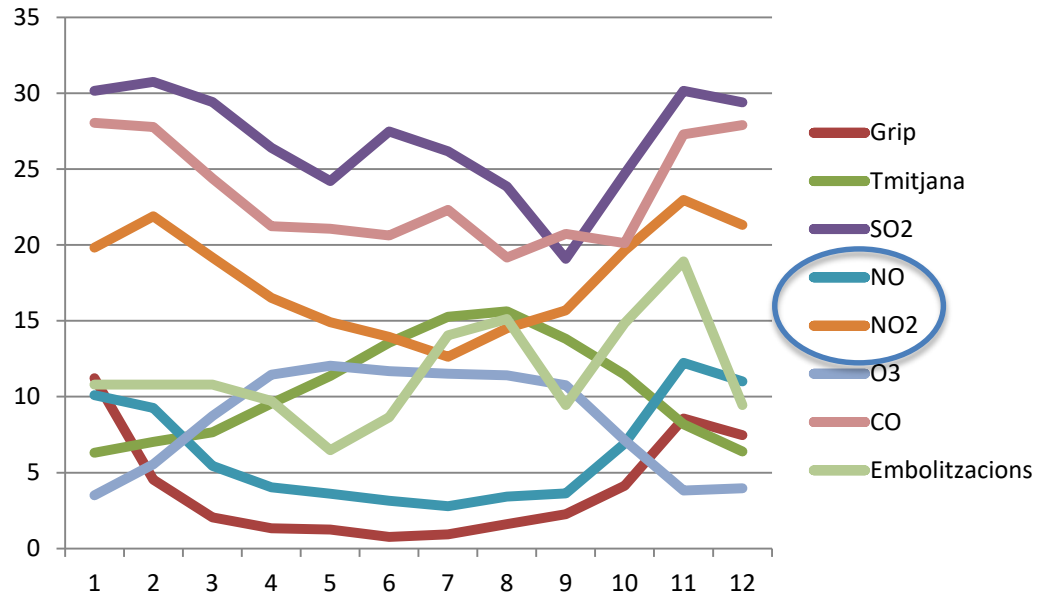
● 21

● 50

Fes clic per utilitzar Flash →

TABLE 2
Poisson regression exponentiated coefficients of the relationship between concentration of air contaminants and monthly number of embolizations

Contaminants	Relationship between number of embolizations in a given month and:		
	Concentration of the contaminant in the same month (x_t)	Concentration of the contaminant in the previous month (x_{t-1})	Increase (from the previous month) in the concentration of the contaminant ($x_t - x_{t-1}$)
Sulfur dioxide, per 1 $\mu\text{g}/\text{m}^3$	1.010 (P=0.918)	1.070 (P=0.521)	0.961 (P=0.636)
Nitric oxide, per 15 $\mu\text{g}/\text{m}^3$	1.169 (P=0.132)	0.958 (P=0.679)	1.445 (P=0.006)**
Nitrogen dioxide, per 10 $\mu\text{g}/\text{m}^3$	1.135 (P=0.177)	0.945 (P=0.521)	1.292 (P=0.014)*
Ozone, per 20 $\mu\text{g}/\text{m}^3$	0.868 (P=0.154)	0.900 (P=0.301)	0.839 (P=0.302)
Carbon monoxide, per 0.1 $\mu\text{g}/\text{m}^3$	1.073 (P=0.490)	0.923 (P=0.511)	1.253 (P=0.094)
PM ₁₀ , per 10 $\mu\text{g}/\text{m}^3$	1.029 (P=0.770)	0.991 (P=0.926)	1.097 (P=0.432)



- Increment hemoptisis amb augments de *NO* i *NO₂*
- Només *NO* era significatiu a l'ajustar per temperatura
- *NO_x*
 - Natural: descomposició bacteriana, incendis, crema rostolls, ctivitat volcànica
 - Crema combustibles fòssils

- Estudis retrospectius
- Dades mensuals (no diàries)
- Cas basat en un procediment (embolització)
- Subjectivitat
- Àmbit geogràfic limitat
- Únic centre hospitalari

- Existeix temporalitat en l'aparició d'hemoptisi
- La temperatura (baixa) s'associa amb un increment de les hemoptisis
- Els virus respiratoris poden ser precipitar-la
- La contaminació pot ser un desencadenant en la presentació d'hemoptisi

- Establir recomanacions per aquells pacients amb risc de sagnat
 - Patologia associada
 - Antecedent d'hemoptisi