

2012-08-21-130 CGN minireviews on mycobacteria (01) Asthma
To: (04) Food-borne, water-borne and air-borne diseases; (05) Zoonoses, general; (08) Mycobacterial diseases;
(22) Veterinary administration

CGN minireviews on mycobacteria as a public health risk

A new series, aimed at stimulating discussion on published literature dealing with the threat to public health posed by mycobacteria. Although some information of global significance has been known for decades, the risk posed by mycobacteria remains underestimated.

Prepared by the [Reference Laboratory for Paratuberculosis and Avian Tuberculosis](#) World Organization for Animal Health (OIE) and [Biomedical Technology, Epidemiology and Food Safety Global Network](#) operating in the Veterinary Research Institute, Brno, Czech Republic

We believe in the [One Health Initiative](#)

(

(01) Do you know, that mycobacteria may trigger asthma

Muramylpeptides originate from peptidoclycans, the constituents of mycobacterial cell walls
Asthma is an autoimmune disease triggered by muramylpeptides

Billmann-Born et al. 2011

Meat can contain 10 000 *Mycobacterium avium* subsp. *paratuberculosis* cells per gram

Pribylova et al. 2011

Contamination of meat by *Mycobacterium avium* subsp. *paratuberculosis* is not considered as a reason to recall meat from distribution

Children (n=1321) in the age range from 10.1 to 12.5 years, who consume one or more hamburgers weekly, suffer from asthma more frequently than controls

Wickens et al. 2005

NTM infection can be associated with asthma and should be considered in difficult-to-treat, disease, especially in older individuals with more severe airflow obstruction and greater exposure to inhaled or systemic corticosteroids.

Fritscher et al. 2011

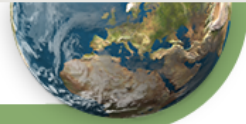
Hot tub lung likely represents hypersensitivity pneumonitis due to inhalational exposure to *M. avium* complex.

Hanak et al. 2006

[Please share your comments, opinions or suggestions.](#)

References to 01

- Billmann-Born S, Till A, Arlt A, Lipinski S, Sina C, Latiano A, Annese V, Hasler R, Kerick M, Manke T, Seeger D, Hanidu A, Schafer H, van Heel D, Li J, Schreiber S, Rosenstiel P (2011)
Genome-Wide Expression Profiling Identifies an Impairment of Negative Feedback Signals in the Crohn's Disease-Associated NOD2 Variant L1007fsinsC
Journal of Immunology 186, 4027-4038.
- Fritscher, L.G., Marras, T.K., Bradi, A.C., Fritscher, C.C., Balter, M.S., Chapman, K.R. (2011)
Nontuberculous Mycobacterial Infection as a Cause of Difficult-to-Control Asthma A Case-Control Study
Chest, 139, 23-27
- Hanak, V., Kalra, S., Aksamit, T.R., Hartman, T.E., Tazelaar, H.D., Ryu, J.H. (2006)
Hot tub lung: Presenting features and clinical course of 21 patients
Respiratory Medicine, 100, 610-615
- Pribylova R, Slana I, Kralik P, Kralova A, Babak V, Pavlik I (2011)
Correlation of *Mycobacterium avium* subsp *paratuberculosis* counts in gastrointestinal tract, muscles of the diaphragm and the masseter of dairy cattle and potential risk for consumers. International Journal of Food Microbiology 151, 314-318
- Wickens K, Barry D, Friezema A, Rhodius R, Bone N, Purdie G, Crane J (2005)
Fast foods - are they a risk factor for asthma?
Allergy 60, 1537-1541



Next titles

Do you know, that mycobacteria ...

... play a role in an Island story

... are present in water

... are distributed in bottled water

... are present in milk and dairy products

... are present in dried milk for formula feeding

... even after their death can modulate inflammatory cytokines by means of their cell wall components

... were used for immunomodulation in Freund adjuvans already 65 years ago

See the introductory documents

[Paratuberculosis and Crohn's disease: Premises and open questions](#)

[Infectious diseases incorporated FUIDI premises](#)