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Fungi



They are everywhere, they are everywhere...

In evolutionary terms, fungi are ancient. By 300 million years ago, all forms of fungi existed, and there is undisputed evidence of fungal fossils from 400 to 440 million years ago. In general, fungi are free-living in nature and are not dependent on humans or animals for their survival. Prehistoric man must have coexisted with fungi for millions of years, and they probably never posed a serious threat to health. Until the latter decades of the 20th century, modern man would have been more familiar with the positive attributes of fungi: edible mushrooms and truffles; the yeast producing bubbles in beer, champagne and bread; and the discovery of one of the first antibiotics from the mould *Penicillium notatum*.

Fewer than 200 species have been associated with human disease and only a handful of these are capable of causing significant disease in otherwise healthy individuals. However, recent years have seen an increase in morbidity and mortality associated with the appearance of new or previously very rare mycoses. Systemic infection with organisms such as *Candida albicans*, *Aspergillus fumigatus* and *Cryptococcus neoformans* indicates an unprecedented change in the status quo of the relationship of fungi to man.

By the late 1980's, hospital wide and ICU surveillance reported an increased prevalence of pathogens not previously associated with the hospital setting. Of particular note was the emergence of *Candida* species as the six most common infection reported hospital wide and the fourth most common pathogen among nosocomial blood stream infections. Alarming secular trends were also noted, with a fivefold increase in incidence of bloodstream fungal infection over the decade.

The environment is the background on which the host and agent interact and includes demographic, climatic and societal factors that can influence the spread of infection. In a health care setting, reservoirs for fungi include unfiltered air, ventilation systems, contaminated dust during construction, carpeting, food, water and even decorative potted plants. *Candida* is mostly acquired from within the body through prior colonization of the mouth, vagina, skin and gastrointestinal tract, however, person-to-person spread of *Candida* species via the hands of medical personnel has been reported.

For the vast majority, exposure to fungal agents is of little consequence. However, in patients with compromised immunity, harmless fungi can transform into opportunistic pathogens.

The dental workplace exposes dentists, staff and patients to a wide variety of airborne organisms during routine dental work. Bacteria, viruses and fungi contained in micro-droplets are easily inhaled constituting a potential source of infection or they are deposited on working surfaces.

Broad spectrum surface disinfectants that are labeled tuberculocidal, virucidal, bactericidal and fungicidal ensure the elimination of potential disease-causing organisms that may contaminate surfaces in the dental operator.



Greenberg, David MD. "Opportunistic Fungi in the Immunocompromised patient". The Mycology Initiative Program One, Pittsburgh, 2001.