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## Ventilation for Control of Airborne Infectious Diseases in Built Environments

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# Ventilation for Control of Airborne Infectious Diseases in Built Environment.

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## **Abstract**

We protect ourselves from cross infection by supplying fresh air to a room by a diffuser, and this air is distributed in the room according to different principles such as: mixing ventilation, displacement ventilation, vertical ventilation, etc. It can be shown that the protection is high if we use either a high air flow rate or a high personal exposure index. A high air flow rate results in the most efficient reduction of contaminant level in the room, however, draught in the occupied zone and a high running costs set a limit to the flow rate.

A high personal exposure index is difficult to obtain in practice, but a small effect can be seen in some systems. The exposure index is dependent on the running conditions and the system can generally not be recommended.

There is also a possibility to supply air direct to the breathing zone when people are located in fixed positions as in a hospital bed or in an aircraft seat. This principle, called “Personalized Ventilation”, has shown to be very efficient in the protection of people from cross infection, and it may be an interesting application in the further isolation rooms.