Abstract Submitted
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**Experiments on the fluid dynamics of the human cough** GARY SETTLES — Human coughing is studied non-intrusively by high-speed schlieren videography, revealing a turbulent jet lasting up to 1 sec with a total expelled air volume of about 2 L. Velocimetry of eddy motion reveals a jet centerline airspeed of at least 8 m/sec. With Re roughly 18,000 the cough jet is inertia-driven and buoyancy is negligible. It shows typical round-turbulent-jet behavior, including a conical spreading angle of 24 deg, despite irregular initial conditions. The cough jet is projected several m into the surrounding air before it mixes out. It is well known that a cough can transmit infectious agents, and we are advised to cover our mouths in an apparent attempt to thwart the jet formation. Present experiments have shown that wearing a surgical mask or respirator designed to prevent the inhalation of infectious agents also interferes with the cough-jet formation, redirecting it into the person's rising thermal plume. (Tang et al., J. Royal. Soc. Interface 6, S727, 2009.)

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