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abdominal thrusts (Heimlich maneuver), which were at one time recommended for the initial resuscitation of drowning patients, are currently discouraged.⁵

As you alluded to, the evidence concerning the actual volume and effect of water aspiration are murky at best; additionally, many of the studies done in animals have used forced aspiration of large volumes, which may not be applicable to humans. The prevalence of laryngospasm, as well as differences in fluid shifts due to water salinity, are also not well understood. Most importantly, considering real-world education and treatment application, we believe that focusing on these minute details may cause a responder to miss the forest for the trees—or, in this case, the ocean for the waves. Given the effect of hypoxemia duration on patient outcome, it makes sense that the initial treatments can have the greatest effect on outcome. For this reason, we advocate strongly for focusing primarily on the initiation of positive pressure ventilations in patients not breathing adequately after a drowning.⁶ We strongly advocate for avoiding maneuvers and treatments that may take the focus away from initiating these ventilations, such as abdominal thrusts, continuous suctioning, and spinal “immobilization.” If initial attempts at ventilation are unsuccessful, maneuvers to clear the airway may be initiated with the goal of reattempting ventilations as soon as possible.

In Dr. Cianchetti’s letter, he is not wrong in stating that “Putting a child upside down delays mouth-to-mouth breathing for a few seconds, a delay that is probably irrelevant.” In discussions on drowning resuscitation, we scratch and claw at these seconds, much like stroke and cardiac arrest scientists; however, those of us who deal with all of these diseases know “a few seconds” probably is not, in fact, the division between life and death. What does divide life from death in these diseases is the presence of a provider who has a sound understanding of the presenting pathophysiology and well-practiced skill. We believe firmly that the only way to optimize treatment on a global scale is to keep the message simple and clear: Minimize time to the reversal of hypoxemia. By advocating for maneuvers and treatments that delay time to ventilation, we run the risk of adding to the numerous other misguided use of “seconds” that are often encountered during a resuscitation. In the end, these can add up to have a profound effect on the clarity of the message and, most importantly, on patient outcome.

Andrew Schmidt, DO, MPH
University of Florida, Jacksonville
Lifeguards Without Borders
Jacksonville, FL

Justin Sempsrott, MD
Lifeguards Without Borders
Jacksonville, FL

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Climbing Gyms as Possible High-Risk Transmission Locations in Microbial Outbreaks



To the Editor:

The popularity of indoor climbing has increased in recent years. Although high-quality data are not available, market research suggests that 1.5 million people now climb indoors in the United Kingdom every year, with this number increasing 15 to 20% each year (unpublished report commissioned by the Association of British Climbing Walls, 2019). This is in parallel with the rising public profile of climbing epitomized by the Oscar-winning documentary “Free Solo” and the inclusion of climbing in the 2020 Summer Olympic Games.

We would like to highlight the potential of climbing gyms as important locations for the transmission of microbes, including severe acute respiratory syndrome coronavirus (SARS-CoV-2). This is particularly relevant given its recent spread to North America, Japan, and Europe, where indoor climbing is popular.

Indoor climbing involves ascending/traversing walls using artificial holds. During a typical climbing session, a climber touches hundreds of holds with both hands. These same holds are shared with everyone else in the gym and, from our experience, are only cleaned every few months when routes are changed. Anecdotally, we observe that very few climbers wash their hands during sessions, and not all climbers wash their hands after sessions. Sharing holds in this way seems an opportunity for the transmission of bacteria and viruses transmitted by airborne, fecal-oral, and droplet routes via contaminated fomites and high population densities.

Indeed, microorganisms are present throughout the natural environment, with bacteria and viruses of human origin prevalent on fomites located in human-made environments such as kitchens and bathrooms.^{1,2} Although analysis of viral flora is lacking, amplified bacterial SSU rRNA sequencing of climbing hold surfaces reveals that 5% of sequences were likely derived from the oral microbiome and 9% from the genus *Escherichia*, which is mainly found in the enteric tract.³ The pathogenic potential of these microbes is unclear; however, case series have attributed community-acquired methicillin-resistant *Staphylococcus aureus* infection to sharing of bench pressing equipment and floors in volleyball.⁴ Transmission of viral infections such as herpes simplex virus occurs in contact sports; however, there is not yet evidence of viral transmission via shared sports equipment.⁴

Indoor climbing gyms are often in large, poorly insulated buildings and are therefore often cold and difficult to heat. Many pathogens are more stable on colder fomites than in warmer conditions.⁵ Of particular relevance in the current SARS-CoV-2 outbreak is the stability of other coronaviruses, which survive on fomites for longer periods at lower temperatures.⁶

In addition, food is often eaten on site, with some events promoted by communal free food such as pizza. The scarcity of promotional food inevitably induces many people to rush and claim their share without washing their hands and could hypothetically contribute to indirect droplet transmission via the oral mucosa.

We recommend that indoor climbing gyms be considered for closure before other public spaces in the event of infective outbreaks. While open, they should make an effort to verbally encourage climbers to wash their hands before and after sessions, provide ethanol hand gels, make sure soap dispensers are stocked, and display posters encouraging hand washing. We also recommend increasing the frequency of hold cleaning, avoiding cold temperatures, and not offering communal food promotions.

It is well established that closure of public places such as schools can reduce the number of people infected during outbreaks.⁷ However, despite attempts to model the effects of closing public spaces on the containment of outbreaks, it remains unclear when different spaces with different transmission risks should be closed and the extent of associated negative social and economic consequences.^{7,8} While public places are open, containment measures to minimize transmission risk are sensible. Bacteria and enveloped viruses such as SARS-CoV-2 are also susceptible to inactivation by hand gels containing a high percentage of ethanol.^{9,10} Concerted efforts to provide ethanol-based hand gels, posters reminding people to wash their hands regularly, and short verbal interventions reminding people to wash their hands have been effective in reducing

nosocomial infections. These changes could have similar benefits in climbing gyms.⁹

Luke Debenham, BSc

Jacob Reynolds

Birmingham Medical School
College of Medical and Dental Sciences
University of Birmingham, Edgbaston
Birmingham, England

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Needlefish Injury in a Surfer: A Risk to Those Practicing Water Sports



To the Editor:

Fish belonging to the Belonidae family have a geographic distribution in tropical and subtropical regions in the Atlantic, Pacific, and Indian Oceans. Some species of belonids