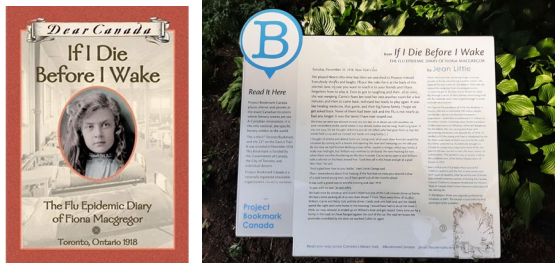


## ☀ **If I Die Before I Wake: The Flu Epidemic Diary of Fiona Macgregor, Toronto, Ontario, 1918**

...is an account by novelist Jean Little of the diary entries of a twelve-year-old girl who endures the Spanish flu epidemic while also keenly aware of WWI as a second major source of loss in her life. Two new hardcover copies are [currently selling on Amazon.ca](#) for C\$1051 – C\$1792, each. A plaque dedicated by [Project Bookmark Canada](#) designates the Collier Street site of the protagonist's home a few blocks from Toronto's major downtown intersection of Bloor and Yonge Streets. The only venture of its kind in the world, the "CanLit Trail" commemorates locations and events of Canadian historical and cultural significance in the exact locations where literary scenes are set. Bookmark #23 [If I Die Before I Wake](#) was erected in December 2018, 13 months prior to the first COVID-19 case in Canada in Toronto, on January 23, 2020.



## ☀ **Masks, Waves and Lockdowns**

The [Society for American Baseball Research](#) long ago recorded what became known as the "Flu Mask Baseball Game" of January 26, 1919 in Pasadena, CA.



Quote: "If these images did not survive, it might be hard to believe such an absurd spectacle ever took place: a baseball game played while everyone present was wearing flu masks. It happened only once.....". Purportedly, the Spanish flu onset of Spring 1918 had subsided during the summer months and returned "with a vengeance in the fall". WWI victory celebrations of November 1918 caused a surge, which subsided such that the City of Los Angeles "lifted its ban on public gatherings in early December".

## ☀ **So, what's new?**

### ☀ **Mask Math and an appetite for it**

In August 2016, a group of scientists published [Evaluating the efficacy of cloth facemasks in reducing particulate matter exposure](#), in which the surgical mask N95 served as the control. The authors concluded: "Compared with cloth masks, disposable surgical masks are more effective in reducing particulate exposure." Flash forward five years into a global pandemic to find that these devices are now designated PPE and terms range from "surgical mask" to "N95 Respirator" to "Filtering Facepiece Respirator (FFR) aka "KN95", the relative merits of which have been published by the USA's CDC [Understanding the Difference](#), popular technology magazines, as in the August 2021 issue of Popular Mechanics' ["N95 vs. KN95 Masks"](#) and in local pharmacies, for the benefit of store patrons.

### ☀ **Particle size matters**

Particle size is a strong determinant of efficacy, be it the laxation effect of dietary fibre, the success of a pharmaceutical measured in Daltons or the flavour dispersion between minced or chopped onions. Further, airborne particles are either droplets (visible to the naked eye) or aerosol (invisible). Engineers have documented the particle size of airborne material - [Particle Sizes](#) - be it types of dust - calcium, grain, insecticide, lead, tea - all ranging from 0.1-1-10-100-1000 microns ( $\mu\text{m}$ ), viruses at 0.005-0.3  $\mu\text{m}$ , bacteria at 0.3-60  $\mu\text{m}$  and human hair 40-300  $\mu\text{m}$ . Engineering solutions to control COVID-19 exposure apply to ventilation systems and physical barriers.

### ☀ **Engineering tech + textile science**

The [Aerosol Laboratory at UBC](#) has blended the three areas of study. Having measured the COVID-19 particle size to be a miniscule 0.1  $\mu\text{m}$ , and noting that it can (and does) hitchhike a ride by attaching to larger particle sizes, the facility has created a four-column grid which cross-references virus particle sizes from 0.1 to > 100  $\mu\text{m}$  and the transmission characteristics of each size range with the type of face mask and engineering controls most suited to provide optimum protection against COVID-19. **FF**

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