

Norovirus: From Satan's Biohazard Lab To Your Duodenum



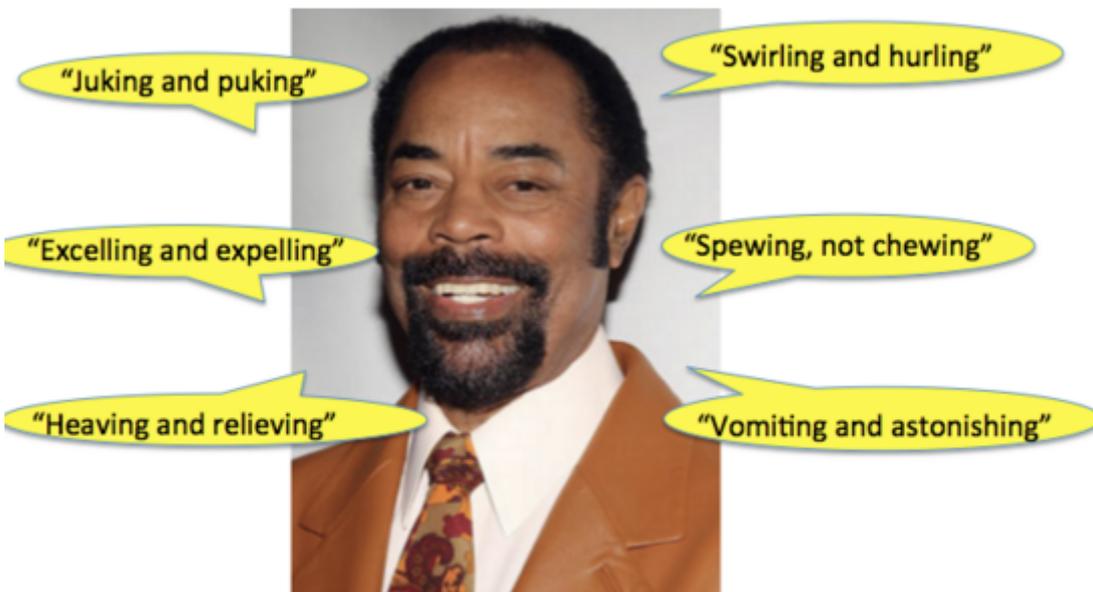
By Josh Bloom — February 8, 2016



heh heh

I've been writing about viruses quite a bit lately (for obvious

reasons), so it is only fitting that this week, people in my office all of a sudden started coming down with one. And a nasty one at that. What was it? Let's just let the incomparable Walt "Clyde" Frazier (1) answer:



Walt "Clyde" Frazier.
Dishing and Swishing since 1967

He and I are talking about ***norovirus*** Satan's personal favorite biohazard.

First of all, you can take most of the medical advice about ways to avoid catching norovirus (aka "the stomach flu"), and flush it down the toilet. You know, that household item that you are going to become intimately familiar with should you catch this hideous monster.

And the odds are pretty good that you will. Twenty million of us (in the U.S. alone) will get it every year, and it is responsible for [93 percent](#) [1] of all outbreaks of gastroenteritis annually. Yet, if you

read the "advice" that is dispensed by medical sites, and health agencies, such as the [CDC](#) [2] you will be woefully uninformed. The best they have to offer is "**Wash your hands carefully with soap and water.**" Puhleeeaze. They must be kidding. (I'm not saying that you should *not* wash your hands. It will help, at least to some degree. My guess is that "some" is a rather small number. And why not wash them anyhow?). Also, rehydration (drinking stuff) is recommended, but when everything that goes down comes back up five seconds later, that gets old fast.



The hand washing thing didn't work out so well for this poor woman. And it would seem that she may have overdone it.

If you are one of the 20 million, it is because of some or all of these reasons:

1. It is one of the most, or perhaps even, *the* most contagious pathogen on earth. It has been estimated that as few as [10-20 viruses](#) [3] may be necessary to get infected. This is a crazy low number.
2. It can be transmitted in many ways: Fecal to oral (this is why it is the most common cause of food poisoning, see: Chipotle), from surfaces, and even by air, and, of course, from contact with the vomit itself.
3. But, you don't even need to be in contact! If you are near someone who is vomiting, the aerosolized virus, which projects further than you'd think, can infect you. In fact, [one study](#) [4] examined a case in a restaurant where a woman vomited at the table. (She clearly did not attend finishing school.) But, people *at other tables* caught it. The closer the table, the more likely they were to catch it.
4. It is hard to "kill." It laughs at alcohol disinfectants.
5. You get little or no resistance from catching it. You can catch it again.
6. Once you are exposed, it takes up residence in your small intestine, and the 10 viruses turn into a zillion viruses. Then you are toast.
7. There is no approved vaccine; however, there is one candidate in Phase III trials that is doing [rather well](#) [5].

If this vaccine hits the market, you do not want to get between me and the pharmacy. It will look something like this:

<https://www.youtube.com/watch?v=AnfbhdELQLA> [6]

Let's give the CDC a break with the hand washing thing. Aside from moving to Venus, there isn't too much you can really do. But they also [screwed this up](#): [7]

"There is no specific medicine to treat people with norovirus illness."

Sorry to break it to you guys, but there *is* a drug, and it works very well. It's called Zofran (generic name is ondansetron). Zofran, which was approved in 1989, was designed to counter the nausea and vomiting from chemotherapy, and has [revolutionized](#) [8] the entire process, allowing patients many of whom stopped their therapy early because of the side effects to finish chemo, and possibly save their lives.

Zofran is also approved to treat nausea and vomiting from:

- General anesthesia
- Radiation therapy
- Morning sickness (off-label)
- **Gastroenteritis** <----- (off-label)

Oh, CDC dudes ... take note of that last one. Yes there is a medicine to treat people with norovirus infection (or rotavirus, the "kid's version" of the infection). And it works rather well:

Dr. John Dunn, M.D., Carl R. Darnall Army Medical Center: We see hundreds of kids every month at our emergency department. The nurses have the authority to administer Zofran one of the safest drugs we have for vomiting kids as young as 2 months right at the door. By the time I see the kids, they are already feeling fine and sucking on a Popsicle.

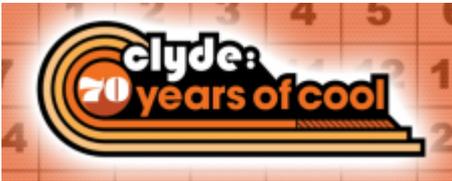
Dr. Amanda Chen writing in [The Journal of Pediatrics and Child Health](#) [9]: "Oral ondansetron therapy, as a single dose, should be considered for infants and children six months to 12 years of age who present to the ED with vomiting related to suspected acute gastroenteritis..."

[Dr. Stephen B. Freedman writing in NEJM](#) [10]: As compared with children who received placebo, children who received ondansetron were less likely to vomit (14 percent vs. 35 percent... vomited less often 0.18 vs. 0.65 [episodes per child]... had greater oral intake (239 ml vs. 196 ml) and were less likely to be treated by intravenous rehydration (14 percent vs. 31 percent)..."

[eMedicineHealth](#) [11]: "People with severe nausea and vomiting [from norovirus] are often given medicine (for example, ... ondansetron) intravenously to reduce or stop vomiting."

So, there you have it. We are still at the mercy of one of nature's perfect weapons, and there is little to do to fight back. Except for a very good drug or a trip to Venus. I will be paying careful attention to Takeda, the Japanese pharmaceutical company that is developing the vaccine.

The good news is that norovirus infection is most prevalent in cold weather, thus its nickname "The Winter Vomiting Disease." Summer is only a few months away, and it should be nice and hot, although probably not as hot as Venus.



NOTE: (1) For those of you who are under 50, or not basketball fans, seven-time All-Star Walt "Clyde" Frazier, one of the great guards ever to play the game, led the Knicks to the only two championships in the history of the franchise (1970, and 1973). As great as he was, he was just as well-known for his coolness and style. As a Knicks broadcaster since 1987, he is now known for his hundreds of tongue-in-cheek rhymes, which he uses liberally throughout the game. They may or may not make sense, but this is irrelevant. "Dishing and swishing" is probably his signature adage. In celebration of his 70th birthday, the Madison Square Garden Network created an incredible [tribute](#) ^[12] called "Clyde 70 Years of Cool." And, cool he was/is. Although he certainly could have, Frazier did not dunk, nor did he ever have a technical foul called on him during his entire career. Now, *that* is cool.

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Links

- [1] https://www.researchgate.net/publication/5984370_Noroviruses_-_Challenges_to_Control
- [2] <http://www.cdc.gov/norovirus/preventing-infection.html>
- [3] http://www.medicinenet.com/norovirus_infection/article.htm
- [4] http://www.cdc.gov/nceh/ehs/Docs/Evidence_for_Airborne_Transmission_of_Norwalk-like_Virus.pdf
- [5] <http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1001807>
- [6] <https://www.youtube.com/watch?v=AnfbhdELQLA>
- [7] <http://www.cdc.gov/norovirus/about/treatment.html>
- [8] <http://www.healio.com/hematology-oncology/practice-management/news/print/hemonc-today/%7Bb4068d05-e070-42e8-a57b-15b4898fae04%7D/controlling-chemotherapy-induced-nausea-and-vomiting--a-new-antiemetic-delivery-system>
- [9] <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3077311/>
- [10] <http://www.nejm.org/doi/full/10.1056/NEJMoa055119>
- [11] http://www.emedicinehealth.com/norovirus/page7_em.htm
- [12] <http://www.msgnetworks.com/teams/knicks/walt-clyde-frazier/70-years-of-cool.html>