INFORMATION FOR THE BABY CARRIER LENDING LIBRARIAN

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Dejà Vu

"I must have made this molecule before;

It is familiar to the core!"

Said a yeast cell emerging from mitosis,

With no experience yet in synthesis.

Then, guided by a transmigrant human gene,

It assembled that "alien" protein.

Boghos L. Artinian

1. **Hand, foot and mouth disease (HFMD) or Coxsackie virus**
2. **Measles (Rubeola) and Rubella (German Measles or 3-Day Measles)**
3. **Influenza (Flu)/RSV/Cold/Rhinovirus/Croup**
4. **Lice (pediculosis) - Head lice and body lice**
5. **Bed bugs (Cimex lectularius)**
6. **GI illnesses causing diarrhea including norovirus, rotavirus, Clostridium difficile (C Diff)**
7. **Chicken Pox (Varicella)**
8. **Poison Plants: Ivy/Oak/Sumac**
9. **Fifth Disease (erythema infectiosum or slapped cheek disease)**
10. **Roseola (Sixth Disease)**
11. **Staphylococcus aureus / MRSA (methicillin resistant staphylococcus aureus)**
12. **Pertussis (Whooping Cough)**
13. **Group A Streptococcus (Impetigo/Scarlet Fever/Strep Throat)**
14. **Yeast (Candida albicans)**
15. **Viral warts, HPV (human papilloma virus) and Molluscum Contagiosum**
16. **Scabies**
17. **Ringworm**
18. **Conjunctivitis (pink eye)**
19. **Pin worms, threadworm infection, enterobiasis, or oxyuriasis**
20. **Mucormycosis (zygomycosis)**
21. **COVID-19, Coronavirus, SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)**

Major Microbiological Themes:

a. **Only <1% of germs cause disease in humans (are pathogenic). Healthy immune systems are fantastically effective at killing germs before they make us sick.**
b. **Most pathogens require humans for transmission and are not transmittable through fabrics.**
c. **Germs may be present on fabrics but this does not mean they are likely to cause disease in persons using that fabric.**
d. **Soap and water is a very effective way to remove bacteria and viruses. Water hot enough to kill bacteria is from 140-150 degrees F. This temperature may damage some fabrics. Sunlight is a safe and effective way to kill germs.**
e. **Direct sunlight (not through a window) is an effective way to kill many pathogenic bacteria and viruses. The fabric should be free of dirt. Both sides of the fabric should be in contact with direct sunlight. If the fabric is wet, it should be allowed to fully dry in sunlight. One sunny afternoon is enough exposure. The sun is much more effective at killing microbes than freezing is.**
f. **Children or babywearers who have undiagnosed or contagious illnesses should not use library carriers.**
g. **Washing with soap and water and sun drying is effective except with lice, bed bugs, scabies and sometimes poisonous plants.**
h. **Parents/caregivers of children with immune system disorders and/or severe allergic conditions are the best persons to decide whether accessing library carriers is in their child's best interests.**

1. **Hand, foot and mouth disease (HFMD) or Coxsackie virus**

Transmission occurs through contact with stool or saliva from hands or toys. Coxsackie can live on surfaces for days. Normal washing will remove the virus from surfaces.

http://phpa.dhmh.maryland.gov/IDEHASharedDocuments/hand_foot_mouth_disease.pdf

http://www.cdc.gov/hand-foot-mouth/about/transmission.html

2. **Measles (Rubeola) And Rubella (German Measles or 3-Day Measles)**

Measles is highly contagious and can be spread to others from four days before to four days after the rash appears. The virus lives in the mucus in the nose and throat of the infected person. When that person sneezes or coughs, droplets spray into the air. The droplets can get into other people's noses or throats when they breathe or put their fingers in their mouth or nose after touching an infected surface. The virus can live on infected surfaces for up to 2 hours. Washing will remove the pathogen.

http://www.cdc.gov/measles/about/transmission.html

http://www.cdc.gov/rubella/about/index.html

3. **Influenza (Flu)/RSV/Cold/Rhinovirus/Croup**

Flu viruses are spread mainly by droplets made when people with flu cough, sneeze or talk. Less often, a person might also get flu by touching a surface or object that has flu virus on it and then touching their own mouth or nose. Linens should not be shared without washing thoroughly first. http://www.cdc.gov/flu/about/disease/spread.htm

Follow the same protocol for other respiratory viruses such as rhinovirus, respiratory syncytial virus (RSV), croup, etc.

4. **Head lice (pediculosis) and body lice**

The main mode of transmission of head lice is contact with a person who is already infested (i.e., head-to-head contact). Less commonly, transmission via fomites may occur with regards to head lice (more common with body lice). Wearing clothing such as hats, scarves, coats, sports uniforms, or hair ribbons worn by an infested person; using infested combs, brushes or towels; or lying on a bed, couch, pillow, carpet, or stuffed animal that has recently been in contact with an infested person may result in transmission. Of note, both nymph and adult lice forms need to feed on blood to live. If an adult louse does not have a blood meal, it can die in 2 days. http://www.cdc.gov/dpdx/pediculosis/

5. **Bed bugs (*Cimex lectularius*)**

Bed bugs should not be considered as a medical or public health hazard. Bed bugs are not known to spread disease. Bed bugs can be an annoyance because their presence may cause itching and loss of sleep.
http://www.cdc.gov/parasites/bedbugs/faqs.html

For washable items research shows that washing in hot water for 30 minutes, or tumble drying for 30 minutes on high will kill all stages of bed bugs. Non-washables are a little trickier. Seven pounds of items placed in clear bags in direct sunlight on a 95 degree fahrenheit day will get hot enough to kill all bed bug life stages in one afternoon. Also, placing bagged items in a chest freezer (0 degrees F) for 8-10 hours is lethal for bed bugs and their eggs.
http://citybugs.tamu.edu/factsheets/biting-stinging/others/ent-3012/

6. **GI illnesses causing diarrhea including Clostridium Difficile (C. diff), norovirus, rotavirus**

A 2018 study found C. diff can survive hospital laundering. Because of this, guidelines have been updated to wash thoroughly and dry in direct sunlight.

Rotavirus: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4524135/

Clostridium Difficile: https://www.cambridge.org/core/journals/infection-control-and-hospital-epidemiology/article/impact-of-ultraviolet-germicidal-irradiation-for-no-touch-terminal-room-disinfection-on-clostridium-difficile-infection-incidence-among-hematology-oncology-patients/C7EEE8AECAF1BCAA8036321140834AFD

7. **Chicken Pox (Varicella)**

The virus spreads in the air when an infected person coughs or sneezes. It can also be spread by touching or breathing in the virus particles that come from chickenpox blisters. Chickenpox can also be spread from people with shingles. A person with shingles can spread the virus to others who have never had chickenpox or received the chickenpox vaccine. In these cases, the exposed person might develop chickenpox. Contact with the fluid of chickenpox blisters can also spread the virus, but it does not live long on inanimate objects, such as doorknobs. Normal washing will remove the virus.

http://www.cdc.gov/chickenpox/about/transmission.html

8. **Poison Plants: Ivy/Oak/Sumac**

The oil from poison ivy is extremely stable and will stay potent - essentially forever. You can get a rash from clothing or tools that have the oil from last summer, or even from many years back. Once you have the rash the oil has been absorbed and you probably can't spread it to others or elsewhere on yourself. If you get big blisters filled with liquid it is mostly water and will not spread the rash even if they break.

If clothing has urushiol oil on it wash it twice, if possible with bleach. Use the warmest water possible. Warm water is more effective at removing urushiol oil. http://www.cdc.gov/niosh/topics/plants/

9. **Fifth Disease (erythema infectiosum or slapped cheek disease)**

Fifth disease is usually mild. It is spread by respiratory droplets that enter the air when an infected person coughs or sneezes, or through blood. Washing should remove the virus.

https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/health+topics/health+conditions+prevention+and+treatment/infectious+diseases/parvovirus+b19+infection/parvovirus+b19+infection+fifth+disease+slapped+cheek+slapped+face+erythema+infectiosum+-+including+symptoms+treatment+and+prevention

10. **Roseola (Sixth Disease)**

Roseola is spread from person to person, typically by transfer of oral secretions. Roseola is not very contagious. The incubation period between exposure to the virus and onset of symptoms is nine to 10 days. Normal washing will remove the virus.

http://www.medicinenet.com/roseola/page2.htm#how_is_roseola_spread

11. **Staphylococcus aureus / MRSA (methicillin resistant staphylococcus aureus)**

MRSA skin infections are transmitted primarily by skin-to-skin contact and by contact with surfaces that have come into contact with someone else's infection. Covering infections will greatly reduce the risks of surfaces becoming contaminated with MRSA. http://www.cdc.gov/mrsa/community/schools/index.html

Routine laundry procedures, detergents, and laundry additives will all help to make clothes, towels, and linens safe to wear or touch. If items have been contaminated by infectious material, these may be laundered separately, but this is not absolutely necessary. http://www.cdc.gov/mrsa/community/enviroment/laundry.html

12. **Pertussis (*Bordetella pertussis* or Whooping Cough)**

Pertussis is a very contagious disease only found in humans and is spread from person to person. People with pertussis usually spread the disease by coughing or sneezing while in close contact with others, who then breathe in the pertussis bacteria. http://www.cdc.gov/pertussis/about/causes-transmission.html Transmission through fabrics is not a concern.

13. **Group A Streptococcus (Impetigo/Scarlet Fever/Strep Throat)**

Group A *Streptococcus* (group A strep, GAS) bacteria can live in a person's nose and throat. The bacteria are spread through contact with droplets from an infected person's cough or sneeze. If you touch your mouth, nose, or eyes after

touching something that has these droplets on it, you may become ill. It is also possible for group A strep bacteria to spread from contact with sores from a group A strep skin infection. https://www.cdc.gov/groupastrep/

Impetigo is spread by direct contact with sores or mucus from the nose or throat of an infected person. Wash all household linen in hot water while the infection is present.

http://www.public.health.wa.gov.au/cproot_download/4653/2/impetigo-factsheet.pdf

14. **Yeast diaper rashes (Candida albicans)**

Baby carriers are not likely to transmit yeast rashes. Normal washing and sun drying is sufficient. Freezing does not kill yeast.

https://www.mayoclinic.org/diseases-conditions/diaper-rash/diagnosis-treatment/drc-20371641

http://blog.lilhelper.ca/yeast-infection-cloth-diapers/

15. **Viral warts, HPV (human papilloma virus) and Molluscum Contagiosum**

Warts are spread from person to person. The transmission can be indirect. For instance, a child with a wart on his hand may touch a playground surface that is then touched by another child and the wart spreads. Or a person with a plantar wart uses a shower without wearing shower shoes and another person then uses it and develops a wart. The risk of getting a hand or foot wart from another person is small.

http://www.webmd.com/skin-problems-and-treatments/guide/plantar-warts-palmer-warts Normal washing and sun drying is sufficient.

Molluscum contagiosum spreads easily, and most commonly, through direct skin-to-skin contact, but kids can get it by touching objects that have the virus on them, such as toys, clothing, towels, and bedding.

http://kidshealth.org/parent/infections/skin/molluscum_contagiosum.html Normal washing and sun drying is sufficient.

16. **Scabies** the human itch mite (*Sarcoptes scabiei* var. *hominis*)

Scabies is spread by prolonged skin-to-skin contact with a person who has scabies. Scabies sometimes also can be spread by contact with items such as clothing, bedding, or towels that have been used by a person with scabies, but such spread is very uncommon unless the infested person has crusted scabies. Scabies mites do not survive more than 2-3 days away from human skin. Items such as bedding, clothing, and towels used by a person with scabies can be decontaminated by machine-washing in hot water and drying using the hot cycle or by dry-cleaning. Items that cannot be washed or dry-cleaned can be decontaminated by removing from any body contact for at least 72 hours.

http://www.cdc.gov/parasites/scabies/gen_info/faqs.html

17. **Ringworm (tinea)**

Ringworm is a fungal infection. It is contagious and can be passed from person to person by contact with infected skin areas or by sharing combs and brushes, other personal care items, or clothing. Washing fabrics with soap and water is sufficient to prevent transmission. http://www.medicinenet.com/ringworm/article.htm

18. **Conjunctivitis (pink eye)**

Viral and bacterial pink eye are very contagious and can spread easily and quickly from person to person. Wash pillowcases, sheets, washcloths, and towels in hot water and detergent.

http://www.cdc.gov/Features/Conjunctivitis/ Use sun drying if fabric will be damaged by hot water.

19. **Pin worms, threadworm infection, enterobiasis, or oxyuriasis**

People become infected by unknowingly ingesting microscopic pinworm eggs that can be found on contaminated hands and surfaces such as, bed linens, towels, and clothing. Normal washing and sun drying reduces risk of transmission.

http://kidshealth.org/parent/infections/stomach/pinworm.html#

20. **Mucormycosis (zygomycosis)**

Mucormycosis is a rare infection caused by organisms that belong to a group of fungi called Mucoromycotina in the order Mucorales. These fungi are typically found in the soil and in association with decaying organic matter, such as leaves, compost piles, or rotten wood. Most human infections follow inhalation of fungal spores that have been released into the air. Less frequently, infection occurs during traumatic inoculation, when fungal organisms gain entrance to deep body tissues following a traumatic event that damages the skin. Infection can also occur following ingestion of contaminated food. In 2009 an outbreak occurred from mishandling of hospital linens in New Orleans after Hurricane Katrina. https://www.ncbi.nlm.nih.gov/pubmed/24667485

The infection is more common among people with weakened immune systems, but it can occur (rarely) in people who are otherwise healthy. Risk factors for developing mucormycosis include:

- Uncontrolled diabetes
- Cancer
- Organ transplant
- Neutropenia (low white blood cells)
- Skin trauma (cuts, scrapes, punctures, or burns)

http://www.cdc.gov/fungal/diseases/mucormycosis/

21. **SARS-CoV-19, COVID-19, Coronavirus**

First identified as a pneumonia of unknown cause in December 2019, SARS-CoV-19 was declared a pandemic by early March 2020. The pandemic is ongoing at the time of this writing. The main route of infection is person-to-person by droplets and close contact. Droplet precautions taken by wearing masks are thought to be the most effective way to prevent transmission of the virus outside of healthcare facilities, but research on aeresolization is conflicting and ongoing. There is more to be learned about the novel coronavirus that causes COVID-19. An NEJM preprint article that has not undergone peer review estimates viral contamination on a variety of surfaces from three hours to three days. It is not known the role of fabrics or other fomites in transmission of this virus. The CDC guidelines state that areas unoccupied for 7 days do not need anything other than routine cleaning. Because of the limited information known, an abundance of caution is recommended for baby carrier librarians at this time. Before carriers are checked out, isolating

the carrier in a bag for seven days before routine cleaning can reduce risk for both the librarian and any subsequent library carrier users. No-contact library checkouts can reduce exposure to pathogens. Handwashing and use of 70% alcohol sanitizer should be incorporated into no-contact checkout procedures. Surfaces wiped with 70% alcohol or 3% hydrogen peroxide are most likely free of viable coronaviruses. Take care not to expose materials used in carriers to substances that will degrade them or otherwise harm the carrier. https://www.who.int/health-topics/coronavirus#tab=tab_1

An interesting paper regarding pathogens and linens https://europeantissue.com/wp-content/uploads/The-infection-risks-associated-with-clothing-and-household-linens.pdf Even when pathogens live on fabrics, very few are still capable of causing disease in someone contacting the fabric, especially if it is dry.