

IMPACT ON HUMAN HEALTH

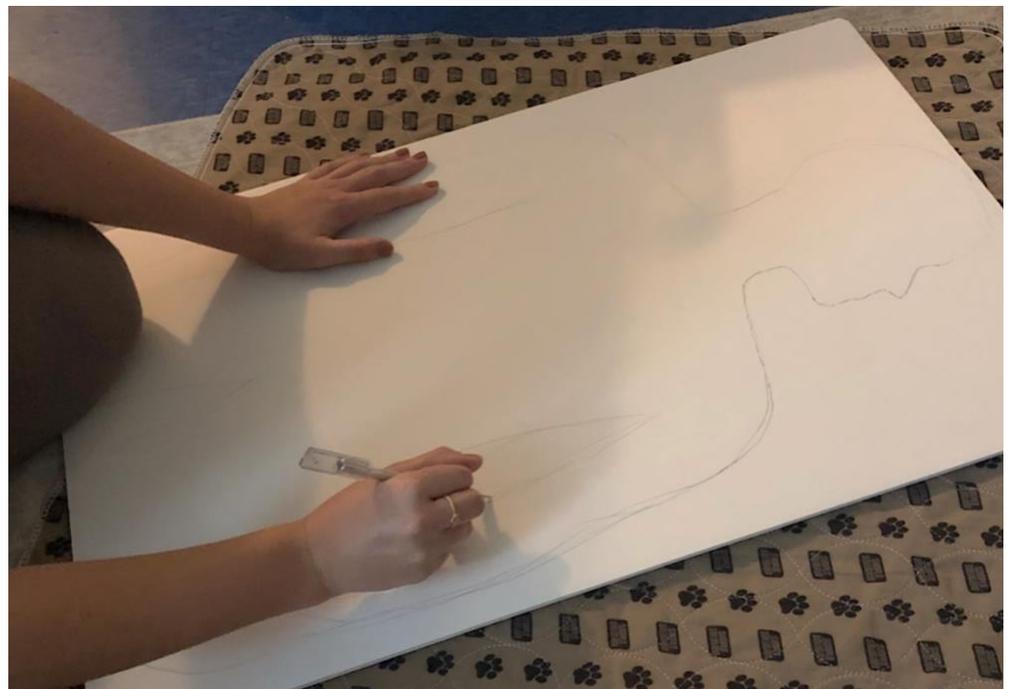
AN INTERACTIVE ACTIVITY

You can create this interactive human body model to get individuals thinking about the impact of climate change on the human body. Before you ask them about what is going to occur to each organ, and how they interconnect, you should always begin by asking if individuals know what the organs normally do. Following a brief background, explain how our changing climate, and ecological breakdown will impact those functions (see two last pages).



CREATING YOUR OWN

Draw out a general human body shape on a foam board or recycled cardboard, then cut it out safely.



Draw and cut out the shapes of organs. You can find images on google to help you with the look and design. Since these are representative, feel free to keep it simple.



After cutting out the organs, glue the cut out on top of the remainder of the foam board or recycled cardboard you used for the human body cut-out.



Cut out the organs safely. Then, use sticky tack and stick them to the human body cut-out at the appropriate area (refer to our picture at the beginning).



EFFECTS ON ORGANS (AS OF SEPT 28. 2019)

Organ	Effect	Reference(s)
Heart	<ul style="list-style-type: none"> Short-term elevations in fine particulate matter (aka PM2.5) increase the relative risk of acute CV events by 1% to 3% within a few days Chronic exposures (years) increase this risk by a larger magnitude (~10%) - partially attributable to the development of cardiometabolic conditions 	http://www.onlinejacc.org/content/72/17/2054
Lungs	<ul style="list-style-type: none"> short-term exposure to air pollutants linked to asthma exacerbation and hospital admissions exposure to ambient air pollutants was associated with reduced lung function and increased airway responsiveness in asthmatic children outdoor air pollution was associated with an increase of COPD incidence and prevalence positive correlation between air pollutants and lung cancer after controlling for cigarette smoking 	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4776742/
Brain	<ul style="list-style-type: none"> Eco-grief/mental health (higher rates of anxiety, depression, PTSD, stress) 	http://www.lancetcountdown.org/media/1418/2018-lancet-countdown-policy-brief-canada.pdf
Kidneys	<ul style="list-style-type: none"> Increased temperature linked to incidence of Chronic Kidney disease (heat, dehydration, blood pressure related) 	https://www.vox.com/future-perfect/2019/2/15/18213988/chronic-kidney-disease-climate-change https://www.ncbi.nlm.nih.gov/pu

		bmed/31203298
Liver	<ul style="list-style-type: none"> • Liver enzyme GGT independently associated with increased risk of cardiovascular disease • An increase of the annual average concentration of PM2.5 increased mean serum concentration of GGT among the study participants by 5.1% 	https://journals.lww.com/epidem/FullText/2013/11000/Air_Pollution_and_Liver_Enzymes.20.aspx#pdf-link
Reproductive	<ul style="list-style-type: none"> • The temp at which point an organism can no longer function and dies is the critical thermal point • Many species are predicted to have populations pushed beyond their critical thermal by climate change • However, every animal, plant and fungus also has an optimal temperature range of fertility, The coldest and hottest points before fertility decreases are referred to as <i>Thermal Fertility Limits</i>, which we will reach even sooner • Decreased fertility across many taxa (vertebrates, insects, etc.) • Mechanisms: decreased sperm counts, ovulation failure, spontaneous abortions, sperm DNA damage, etc. 	https://www.sciencedirect.com/subzero.lib.uoguelph.ca/search/advanced?docId=10.1016%2Fj.tree.2018.12.002
Gastrointestinal	<ul style="list-style-type: none"> • As temp increases, bacterial causes of GI infection appear to increase (influenced by humidity and rainfall) • Extreme weather events were found to be critical drivers of acute gastrointestinal illnesses 	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5923808/ https://atrium.lib.uoguelph.ca/xmlui/handle/10214/7742