“Climate change will cause more psychological than physical harm for U.S. citizens and people around the world, and the costs socially, societally, and economically are apt to be enormous.” – Psychologists for Social Responsibility

**UNDERSTANDING CLIMATE AND WEATHER IMPACTS AS A MENTAL HEALTH ISSUE**

The medical community is becoming increasingly aware of the physical health impacts of climate change, but there is less awareness of the mental health impacts of climate change (MHICC). The following document is meant to provide health professionals with an overview of the MHICC. Health professionals can use this information to improve patient care, and also, due to their status as trusted members in their communities, to educate and influence action on climate change.

**ASSESSING THE TYPES OF PSYCHOLOGICAL IMPACTS**

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<th>ACUTE</th>
<th>CHRONIC</th>
<th>INDIRECT</th>
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<td>Acute climate change impacts are related to extreme weather events, such as heat waves, floods, extreme precipitation events, and severe droughts, which are predicted to increase as a result of climate change.7</td>
<td>Chronic climate change impacts include rising sea levels, changes in temperatures and precipitation, and increases in pollution and human (and animal) diseases.3,4</td>
<td>Climate change can also indirectly affect people through disrupting how they see themselves, each other, and the world.1,4</td>
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<td>The mental health impacts of these events include high levels of stress, trauma, and shock, and can result in post-traumatic stress disorder (PTSD), depression, generalized anxiety, and high-risk coping behaviors, such as substance abuse. Suicidal ideation and even suicide have been shown to increase after these events.3,4,6 These effects are exacerbated for those who have experienced other traumatic events and for those who have lost property or loved ones due to these events. Additionally, these events contribute to existing stressors, thereby compounding stress, and can serve as a tipping point into stress-related impacts, such as depression, anxiety, and substance abuse. Last, disruptions to one’s home or sense of place can disrupt social networks and strain personal relationships, even contributing to an increase in domestic abuse.3</td>
<td>Chronic climate change impacts (and also acute impacts) may lead to chronic stress.6 For example, climate change impacts and its drivers (such as pollution) can lead to asthma, allergies, infectious diseases, and cardiovascular, cognitive, and respiratory problems.1,6 Physical ailments will likely add a lasting source of stress to those experiencing them or watching loved ones affected by them. Increased temperatures have been associated with increased mental health emergencies and even suicide.3,4 With hotter temperatures, people may also not be able to get outside as much, which reduces access to stress-reducing activities, such as exercise.4 Increases in temperature and rainfall have also been linked to increased aggression and violence, including domestic violence, assault, and murders.3,4 Migration due to climate change (ecomigration) is accompanied by a multitude of adverse psychological impacts.3</td>
<td>Solastalgia may occur, which is a sense of loss, desolation, or distress caused by a changing environment.3,4 As landscapes change, people may feel they are losing a source of solace, identity, and security.4 These impacts may be particularly acute for those whose identities are strongly tied to the land. People may also experience ecoanxiety, which is anxiety or worry about adverse environmental impacts, and it is often accompanied by feelings of powerlessness to stop such impacts. People witnessing a changing environment may also feel anger, depression, fear, fatalism, resignation, exhaustion, worry, and guilt for what might happen to future generations.3 These impacts are heightened for those who see climate change as a hybrid risk, which is a risk that has both human and natural causes. Overall, worry about climate change is prevalent in America, with about half of the respondents in a 2017 study indicating they were worried about climate change.8</td>
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THE INTERACTIVE NATURE OF CLIMATE CHANGE IMPACTS

As detailed in the graphic below, the physical impacts of climate change affect mental, physical, and community health (via social systems and infrastructure impacts). One key relationship is how physical impacts, such as asthma, disease, and injury, can cause stress and other mental health impacts. Diminished mental health, in turn, is known to often have physical manifestations, such as impaired sleep quality and eating habits, in addition to increased substance abuse.

CONNECTING THE DOTS ON COMMUNITY IMPACTS

Impacts experienced by individuals will not only interact with complex community dynamics and systemic issues, but can also synergistically aggregate to present new problems at the community level. As has been noted previously, increases in temperature and rainfall have been linked to increased violence and aggression. Additionally, stressors experienced due to climate change, such as competition for scarce resources and disruptions to livelihoods and social supports, are also likely to contribute to conflict and aggression. These stressors are particularly acute for those in developing nations (e.g., Kenya\textsuperscript{9} and Syria\textsuperscript{10}) and have serious global safety implications. With increased levels of interpersonal and inter-group conflict, social stability and cohesion will decrease. The provision of mental health services will also be strained, especially due to extreme weather events. As people experience more anxiety about the future, and for those who are dealing with immediate climate change impacts, there is likely to be an increased focus on the self, which diminishes one’s care for and relationships with others. Changing temperatures and landscapes may take away important outdoor areas where people gather and bond. For communities who have particularly strong connections to the land, their entire culture and social structure could be disrupted if the land changes, is harmed, or becomes uninhabitable. If people are forced to migrate due to climate change, entire communities could be torn apart, thus creating a new set of extremely serious mental and physical health challenges.\textsuperscript{2, 3, 4, 6}

IDENTIFYING VULNERABLE POPULATIONS

Certain groups are more likely to bear the burden of mental health effects due to climate change than others. New tools, such as the Social Vulnerability Index (SVI), are being developed to help medical professionals and planners identify who may be affected most. Some of these groups include the following:

- **Children** – More susceptible to developing mental health issues as the result of trauma and stress
- **Women** – Increased risk of domestic violence occurring to them after a disaster; additional preexisting stress due to being caretakers
- **The Elderly** – Preexisting health conditions and mobility challenges can augment impacts; air pollution linked to cognitive decline in the elderly
- **Economically Disadvantaged** (including people of color and the homeless) – Higher levels of stress; greater difficulty accessing resources that help to mitigate stresses of climate change; evacuation challenges
- **Those strongly connected to land** (including indigenous communities and outdoor workers) – Changes to land can disrupt culture and livelihoods and threaten safety

### PROMOTING MENTAL HEALTH

Humans can be remarkably resilient in adapting to a wide range of changing conditions if they have the right support and resources. A testament to this is, for example, that some people experience post-traumatic growth after a trauma, where they find a new source of meaning in their lives and/or impetus for improvement.

Important components of resilience include:

- **Readiness** – Understanding what potential climate change impacts look like for one’s specific geography and how to respond to these; awareness of vulnerabilities
- **Taking Action** – Taking action can be empowering and can help people cope with feelings of powerlessness and worry about climate change. Group action can help people feel supported that they are not alone in their efforts. Many of the actions taken to combat climate change will have both environmental and health benefits. For example, biking lessens pollution and brings exercise-related benefits; eating less meat reduces greenhouse gas emissions and improves heart health.
- **Cooperation** – For communities, building and strengthening mental health and disaster preparedness infrastructure; for individuals, building and strengthening relationships with family, friends, and community at large (support networks)
- **Harboring Hope** – Having a sense of hope, optimism, and self-efficacy can help individuals build mental resilience, sustain motivation for taking action, and overcome feelings of helplessness and fatalism accompanying ecoanxiety.

### REFERENCES

*Please note: Many of the sources cited here draw upon extensive literature reviews summarizing numerous sources on this topic.