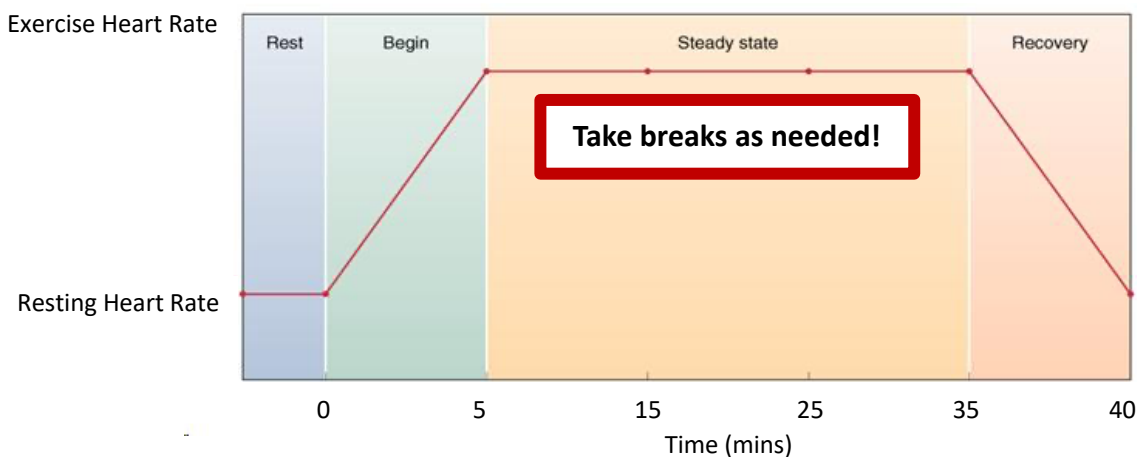


Thermoregulation is the body's ability to regulate its own temperature. During hot and humid temperatures, the body thermoregulates through the autonomic nervous system, which causes **blood vessels to widen (vasodilation)**. Vasodilation allows for blood to travel faster through the body, as there is more room in the vessels. This means that per minute, more blood can travel from the internal organs (where it becomes heated) to the skin (where heat can dissipate). When it is hot and humid, the body also secretes sweat. As more blood travels near the skin (due to vasodilation), the heat from the blood is transferred to the sweat droplets, which evaporates off the skin and cools the body. However, maintaining a steady blood pressure during large-scale vasodilation requires increased cardiac output, which is achieved through an elevation in heart rate and myocardial contractility.

Unfortunately, in the elderly and those with pre-existing cardiovascular conditions, the heart is less able to meet the demands required to thermoregulate in hot and humid conditions.

Guidelines & Recommendations

1. Continue to take your medications & continue to take them at the prescribed intervals
2. Exercise timing:
 - 30mins after waking up
 - 30mins after eating a heavy meal
 - ~60mins after drinking coffee, alcohol or smoking
3. Always remember to warm up (3-5mins), take breaks as needed to cool off and/or hydrate, **and** cool down (3-5mins)



4. Stay hydrated (throughout the day and during exercise)
 - Avoid exercising in “peak” hours (mid-day sun)
 - If you need to, exercise inside with air conditioning or a well-ventilated area
 - Use indoor electric fans to help keep you cool!

5. Dress for the weather

- Wear lightweight, light-colored clothing in breathable fabrics (ex. cotton) or a technical fabric that wicks away moisture
- Proper footwear (well-ventilated)
- Sun protection (SPF, hat, sunglasses, etc.)
- Listen to your body and adjust your efforts accordingly!
Remember, steady state exercise should be done at a low-moderate intensity for a sustained period of time!

Borg's Rating of Perceived Exertion (RPE) Scale	
Perceived Exertion Rating	Description of Exertion
6	No exertion; sitting and resting
7	Extremely light
8	
9	Very light
10	
11	Light
12	
13	Somewhat hard
14	
15	Hard
16	
17	Very hard
18	
19	Extremely hard
20	Maximal exertion

Hydration Recommendations During Exercise

Dr. J.P. Schaman recommends a fluid intake of ~6oz for every 10 mins of exercise. If temperature and humidity are exceptionally high, it is recommended that fluid intake increases to ~10oz for every 6 mins of exercise.

Heat-Related First Aid Emergencies

It is important to be able to recognize the signs and symptoms of heat exhaustion and heat stroke. See the infographic below for information on signs and symptoms, as well as what to do if someone you know is exhibiting these symptoms.

