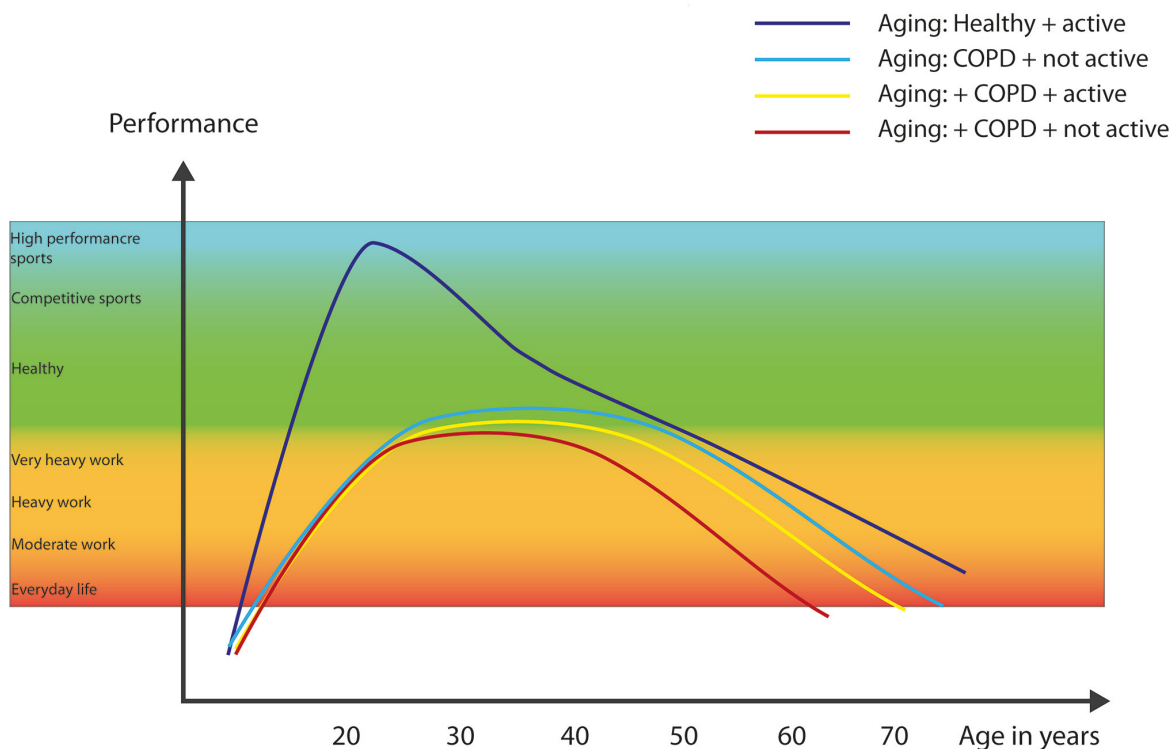


Changes in Exercise Capacity

Comparison of continuous work rate and maximum work rate in healthy people and COPD patients



In the course of the disease, exercise capacity decreases (due to frequent infections, constant breathlessness and physical rest and damages on the organs, among other things). The necessary amount of air for a given work effort cannot be provided. So, “normal” activities of daily life cannot be sustained continuously; activities which were not even done consciously and which were once performed effortlessly. Reduced exercise capacity and all its consequences cause, among other things, a decreasing mobility. It has been proven that a decreasing mobility (determined by a 6-minute walking test leads to higher mortality).

Inability to keep up “the usual pace” as it used to be

The amount of air is just not enough. One acutely experiences severe breathlessness and heavy legs. Exertion is reduced or terminated. “continuous work rate” at “the usual pace” is not possible anymore, stress on organ systems (like the heart, cardiovascular system or lungs) rises to a maximum level every time, even for the simple activities.

Constant “overloading” for years causes certain organs to function insufficiently [decompensation].

Food for thought

In general, the muscles temporarily “do what we want” and start working as soon as we move. The muscles cannot know how much work lies ahead and know even less about the fact that the work effort (e.g. climbing stairs) is not possible due to damages in the lung. There is no warning. In the first 30-60 seconds one is not able to perceive the overload because no “circulatory reaction” has been triggered yet [(p. 17)]. Hence, if one tackles physical activity (starting to walk, climbing stairs) with the usual pace (former pace) the risk to overload is high: the “well-known” termination of exertion within 1-2 minutes.

In daily life, one needs to learn to reduce the exertion (walking, cleaning etc.) enough to perform it continuously: slowing down, splitting movements and controlling the stress and keeping it constant. Those issues and further aids are described in detail in chapter 10.7. Finally, the following example: imagine you drive in your car everyday. Instead of “driving normally” (shifting up the gears to the 5th gear and then driving economically at 3,500 revolutions), you can only shift up to the 3rd gear (a few years later only to the 2nd gear) and constantly drive at 6,000-7,000 revolutions (always in the red area) and you do this over several years. With this in mind, observe how long the engine will last. Thus, start early (at a low degree of severity of COPD) to work towards an appropriate fitness level in order to eventually increase your maximum exercise capacity. This way, you can defer the decrease of exercise capacity (and the increase of load on the organs) and you can drive your engine “economically” at low revolutions in a high gear for much longer.

Consequences of insufficient recovery

After terminating exertion due to breathlessness, one is able to resume exertion. Due to insufficient recovery in the muscles, more air is required at the same pace. This is the reason why the way home after grocery shopping seems to be harder than usual and consequently, the pace is further reduced. Likewise, it becomes impossible to handle multiple physical tasks of daily routine. One is less and less often capable to give 100%: the body is still tired or not recovered, there is a lack of energy sources and the requirements to use the muscles are not met. In everyday life, this insufficient recovery is experienced as “constantly having heavy legs” or “having little/no power” and as feeling “much older than one actually is”. Besides, you need to brace yourself mentally to even move at all. This becomes extremely frustrating in the long run and adds up decisively to the general mental state. Physical training is the essential step to accelerate all recovery processes and thus, to regain strength more quickly and maintain basic life skills.