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Sommario/riassunto	Welcome! We, humans, tend to experience forgetfulness when we get old. The forgetfulness may become more serious memory impairment, dementia. Presumably, we have known it for a long time, but we still do not know the mechanism behind. A normal part of forgetfulness is called age-related memory impairment (AMI), which is considered the first step towards mild cognitive impairment (MCI; transition state) and dementia (disease state). The majority of dementia is attributable to Alzheimer's disease (AD). Progression to dementia occurs at a high rate in patients with AMI. This eBook covers exciting but yet challenging field of cognitive aging. AMI is specific to neural tissues of the brain and is considered to be segmental aging. It happens not only to humans but also to a variety of species. Learning and memory are vulnerable to aging in a wide variety of model species, including worms, fruit flies, insects, snails, fishes, and rodents. Aging specifically reduces the ability to learn new information but leaves "old" memories and procedural memory intact. A comparative approach including the use of model systems seems to facilitate understanding of the molecular mechanisms that lead to AMI and AD. We advocate research on model systems. This eBook also provides the first manuscript co-authored with an AD patient to create a feedback loop from patients incorporated into research. We also included a manuscript on the semi-automated system that was inspired by such a feedback. Those may place a nice flavor to this exciting series of comparative research on

cognitive aging. We hope you enjoy this eBook. Warm regards, Shin Murakami, Ph.D. Welcome! We, humans, tend to experience forgetfulness when we get old. The forgetfulness may become more serious memory impairment, dementia. Presumably, we have known it for a long time, but we still do not know the mechanism behind. A normal part of forgetfulness is called age-related memory impairment (AMI), which is considered the first step towards mild cognitive impairment (MCI; transition state) and dementia (disease state). The majority of dementia is attributable to Alzheimer's disease (AD). Progression to dementia occurs at a high rate in patients with AMI. This eBook covers exciting but yet challenging field of cognitive aging. AMI is specific to neural tissues of the brain and is considered to be segmental aging. It happens not only to humans but also to a variety of species. Learning and memory are vulnerable to aging in a wide variety of model species, including worms, fruit flies, insects, snails, fishes, and rodents. Aging specifically reduces the ability to learn new information but leaves "old" memories and procedural memory intact. A comparative approach including the use of model systems seems to facilitate understanding of the molecular mechanisms that lead to AMI and AD. We advocate research on model systems. This eBook also provides the first manuscript co-authored with an AD patient to create a feedback loop from patients incorporated into research. We also included a manuscript on the semi-automated system that was inspired by such a feedback. Those may place a nice flavor to this exciting series of comparative research on cognitive aging. We hope you enjoy this eBook. Warm regards, Shin Murakami, Ph.D.
