Geriatric syndromes and frailty - the crucial points of geriatric medicine

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Ageing- definition

Inevitable physiological process, which is

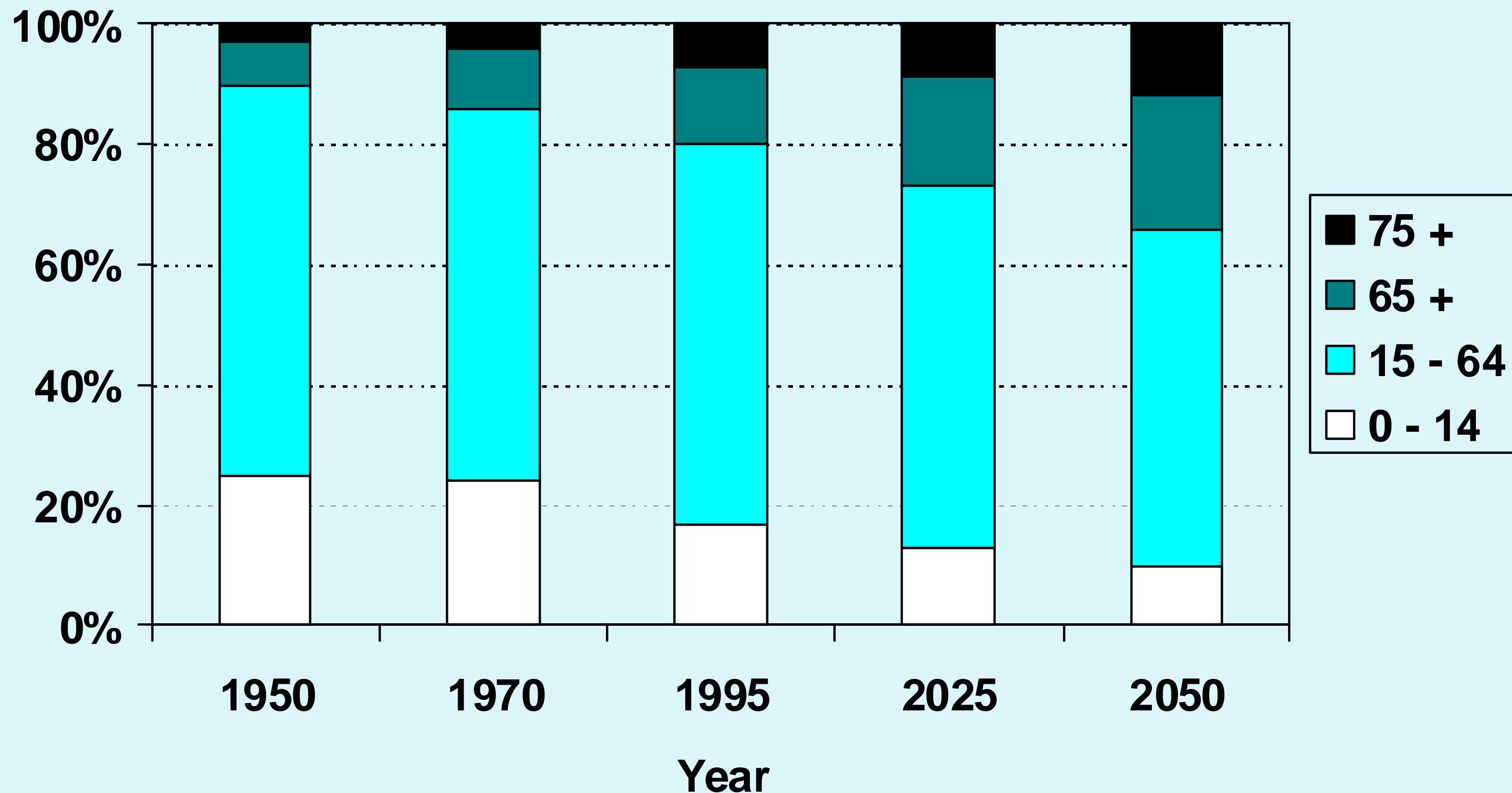
the last ontogenetic period of life .

Over 75 y. break point of ontogenesis.

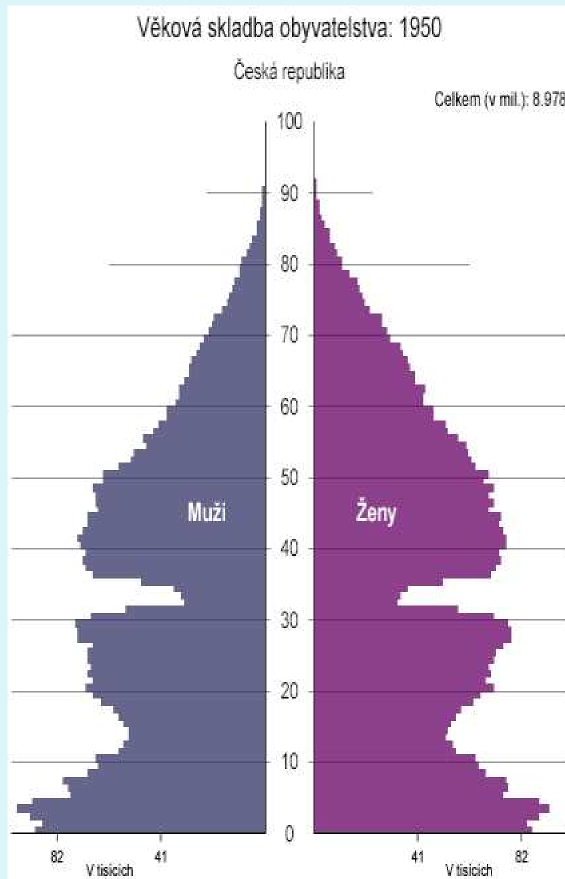
Old Age and Illness

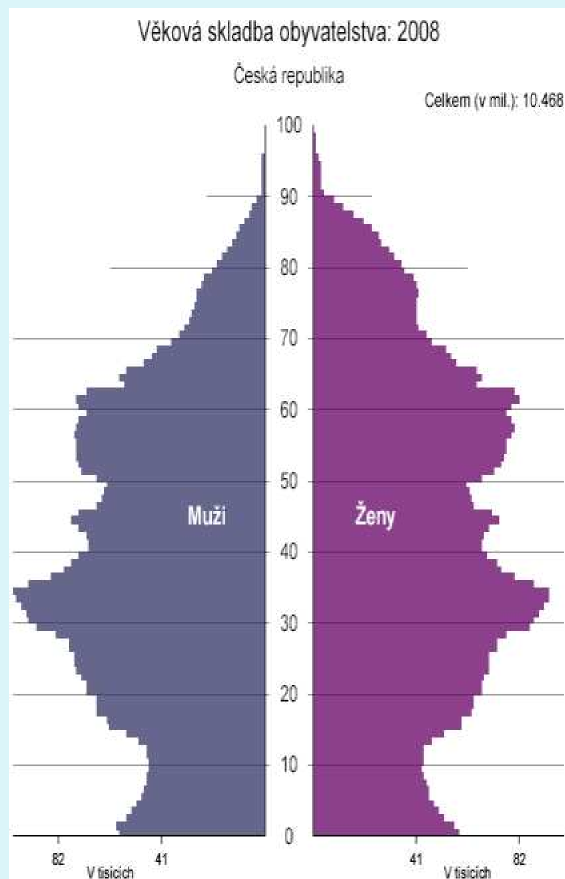
- According to rising age the spectra of morbidity is changing
- ↑ risk of chronical and degenerative illnesses and death
- An old organism adapts badly to varying conditions of internal and external environment

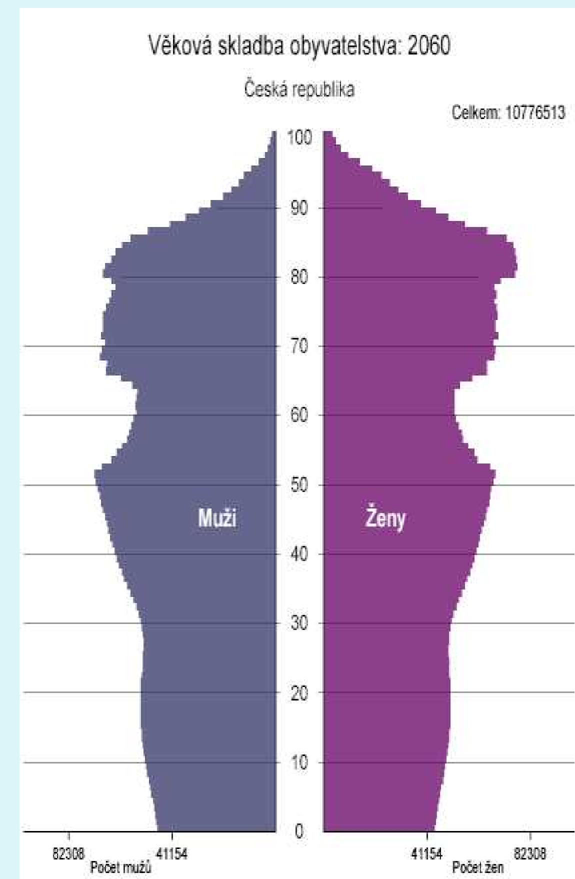
European Population – Age Structure *(Baltes: Gerontology 2003;49:123)*



Population of the Czech Republic 1950 – 2008 - 2060







CR - 2008 and prognosis 2060

(ČSÚ ročenka)

2008	**2060**
≥ **65 y.** – 14,6%	≥ **65 y.** – 33%
≥ **80 y.** – 3,4%	≥ **80 y.** – 14%
≥ **85 y.** – 1,2%	≥ **85 y.** – 7,5%
LE: ♂ 73,5 y.	**LE:** ♂ 85,5 y.
♀ 79,7 y.	♀ 90,1 y.

Age Categories – New Division

- ***65 – 74 y.*** „young seniors“
- ***75 – 84 y.*** „old seniors“ ↓ adaptability

  ↑ vulnerability
- ***85 + y.*** „oldest old“ ↑ frailty

  ↑ dependance

Functional Categorization

1. Fit seniors
2. Independent – fail only due to stress (illness, injury, surgery etc.)
3. Frail – risk even in normal conditions (falls, cognition, mobility, etc.)
4. Bedridden – immobile

Weber P. et al.: Adv. Gerontol., 21, 2008, No 1, pp. 143-147.

Who is a geriatric patient?

- Biologically older patient
- Multi - morbid
- Disabled with functional limitations
- Need - specific geriatric mode

Weber P.: Vnitř. Lék, 51, 2005, č.2, s.123-130.

Difficulties of modern medicine in the care of seniors

- Atomization of medicine
- Absence of holistic approach
- Multi-morbidity – seemingly doesn´t belong anywhere
- ↑ socialization of health problems

Weber P., Svačinová J.: Chapter X, s. 187- 209. In: Reece, Steve M.; NOVA Publisher, New York USA, 2005, 233s. ISBN: 1-59454-238-4

The Main Aim of Geriatrics

1. To preserve the health of seniors
2. To live a high-quality and independent life as long as possible
3. Sustaining and protection of self-sufficiency
4. To minimize the period with sy of FTT

Weber P.: Vnitřní Lékařství. 47, 2001, č.2, s. 106-110.

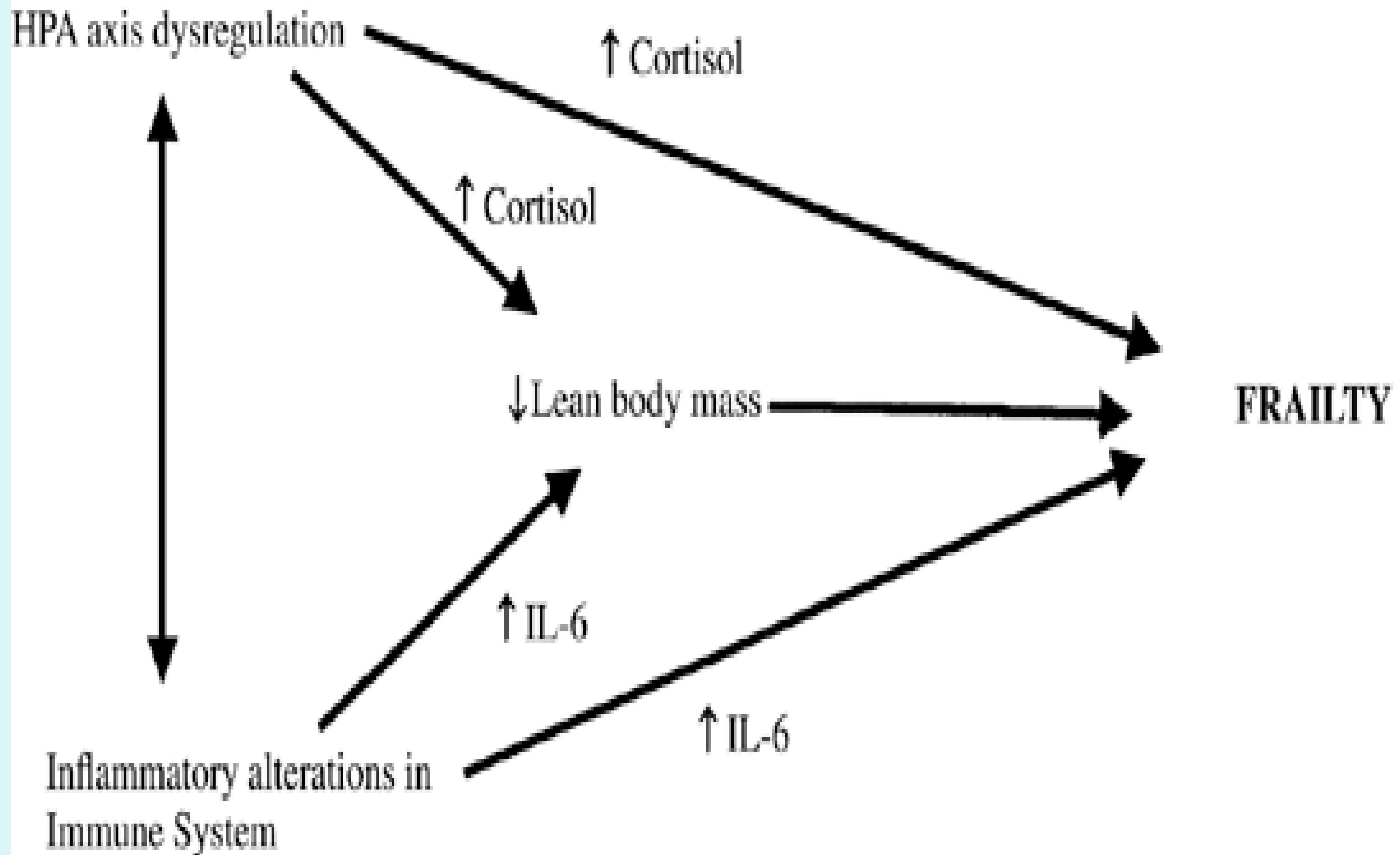
What is frailty?

- Medical syndrome ⇔ sarcopenia
- Neither multimorbidity nor disability
- Multidimensional phenomenon
- Prognostic negative factor
- $\geq$ 65y. $\cong$ 7% ; $\geq$ 85y. $\cong$ 25%

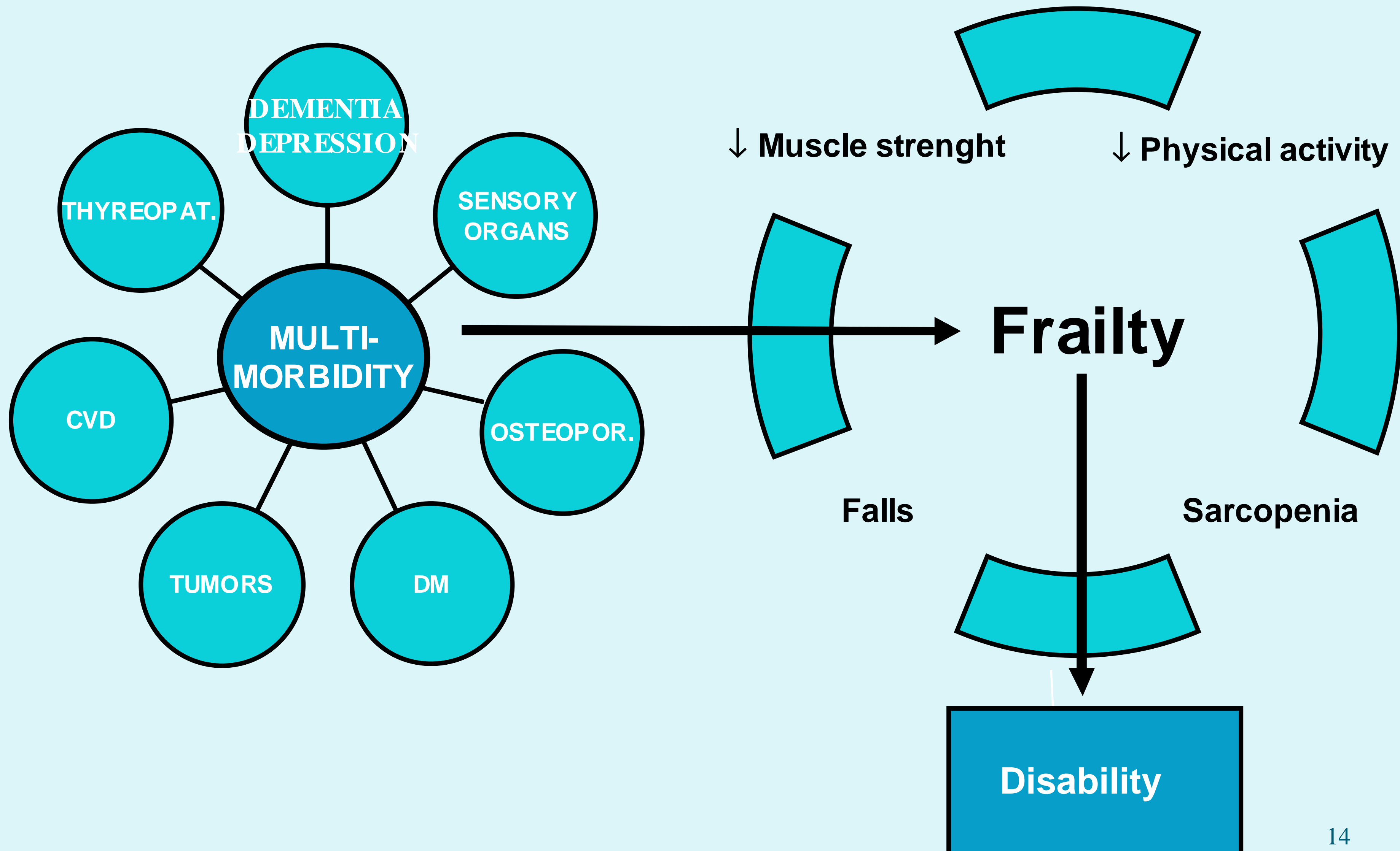
Handicapping at least in 2 of 4 areas: somatic, cognitive, nutritional, social.

Weber P., et al.: Čas. Lék. Čes., 143, 2004, č. 8, s. 547-551.

Disregulation HPA axis



Illnesses and Age vs. frailty

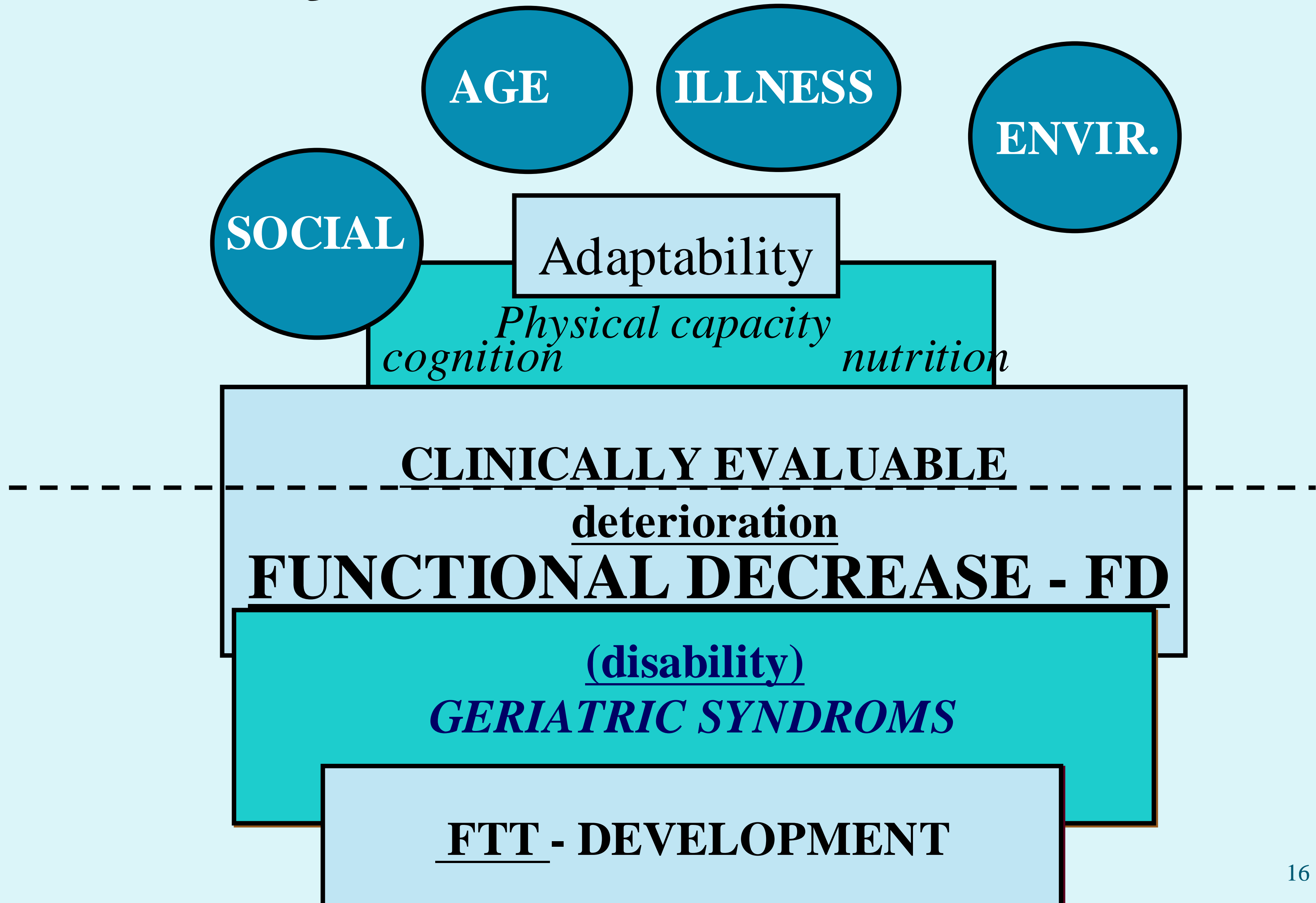


Frailty characteristics

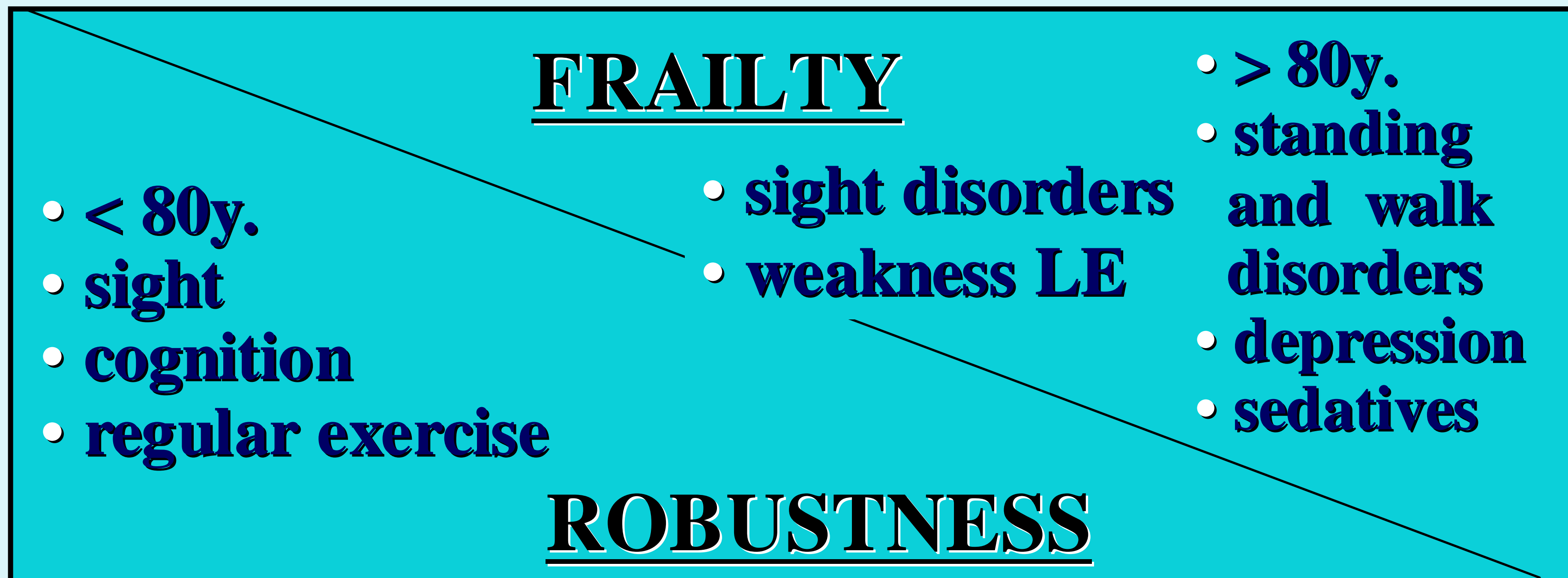
- ↓ physical, mental and social capacities
- ↑ rise or deterioration of disability
- ↑ multimorbidity
- ↑ adverse effect of the drugs (AED)
- ↑ social izolation
- ↑ risk of institutionalization
- ↑ risk of death (>80 y. one of the main)

Weber P., P. Crome: Ageing & Health. 13, 2005, s. 50- 53.

Frailty – relations to FD, FTT



Transition to frailty *(Tinetti, Wolf)*



TRANSITION →

ZD: <2F a >3Z **REVERSIBILITY?** FR: >4F a <1Z

Geriatric giants

1. Instability
2. Immobility
3. Incontinence
4. Intellectual disorders
5. Iatrogenia ?

Weber P.: Postgraduální medicína, 6, 2004, č. 3, příloha, s. 13-17.

Characteristics sy 5 I

- Multicausality
- Chronical process
- Decline of independence
- Impossibility of ordinary treatment

Weber P.: Euro J Ger, 4, 2002, č. 4, s. 167- 172.

Instability

Closely related to such symptoms as:

balance, standing, walk, vertigo and their

consequences – falls.

Mobility Disorders

- Over 65 yrs. 15 to 20 % persons – slow and difficult walk
- Over 75 yrs. 40 % walk: less than 1 mile

  1/3 difficulties with walking the stairs

  15 - 20 % need stick or assistance

  5 % confined to bed

Falls - characteristics

- 65+ y.- 25 - 35 % persons once a year at home
- 1/3 of them: repeated falls
- ↑ with age, maximum in 7th – 8th decade
- With risk factors 50%
- Only 1/4 of falls are registered by paramedics
- Elderly people don´t mention them – falls remind them of their helplessness
- Women: more frequently (↓ muscles, ↑ home activity)

Falls - reasons

1. Mechanic falls (external reasons) - 25 - 30%
   - slipping, tripping, etc.
2. Symptomatic falls (internal reasons) 70-75% - somatic illness consequence
   - Neurological, cardiovascular and psychiatric illnesses; musculoskeletal system disorders, sight and hearing; drugs, alcohol

Immobility Syndrom

- Long-term or permanent confinement to bed (contingently wheelchair) consequences.
- Main symptoms: decubitus, muscular atrophy, decondition, walking stereotype disruption, dehydration, etc.

Urinary incontinence – introduct.

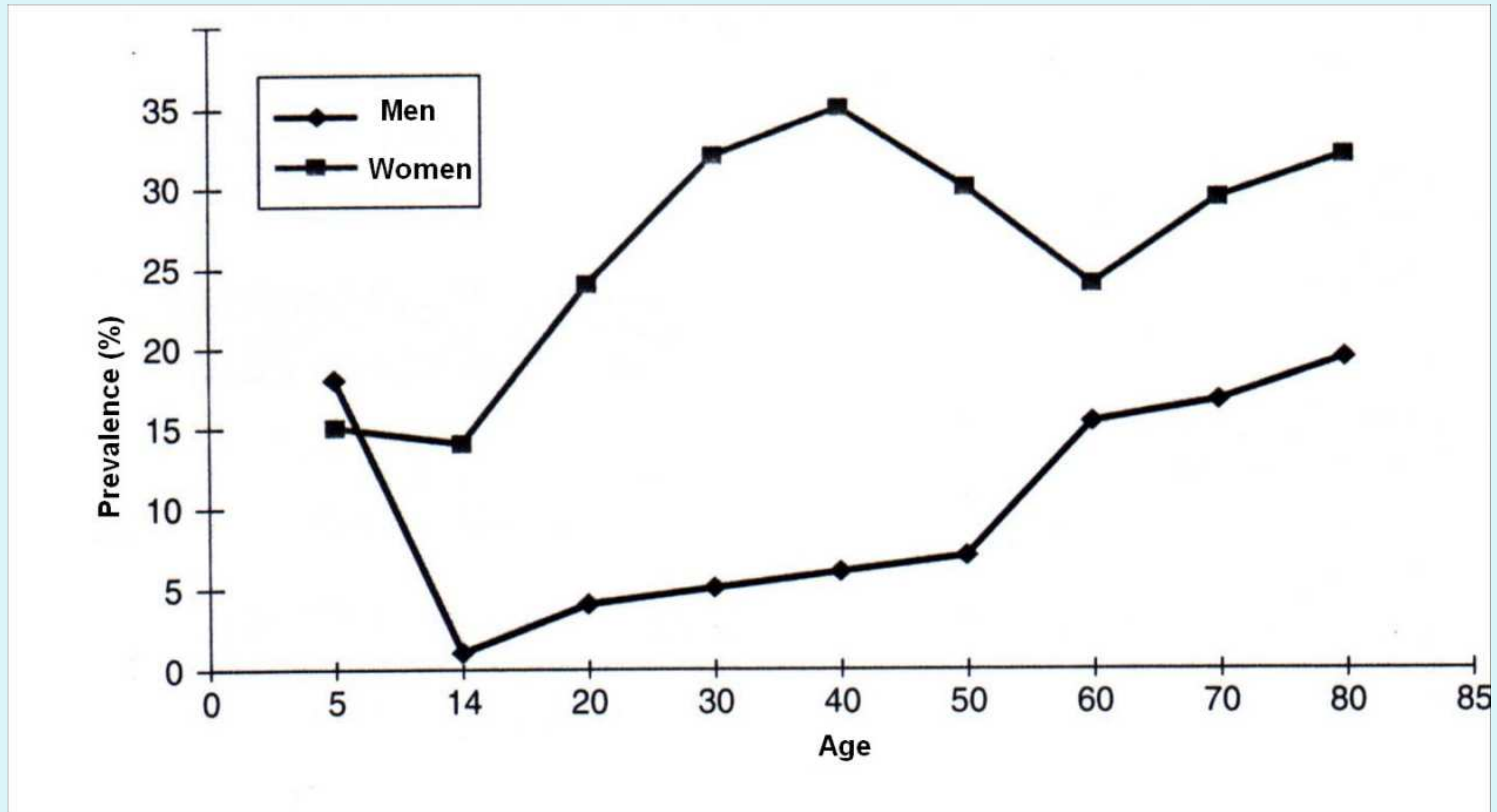
Def.: inability to control the flow of urine and involuntary provable urination, which causes hygienical and social problems to the involved

Prevalence
- over 60 yrs. - 15 - 30% persons
- in very old - > 40%

Consequences
- life interference
- mental deprivation
- incontinence tools costs

The Standardisation of Terminology of Lower Urinary Tract Function, I.C.S. 2002)

Incontinence Occurrence



Specifics of Incontinence in the Elderly

- The oldest old is ashamed of talking about incontinence, more than 1/2 persons conceal it
- The physician has to ask the patient actively

Dementia- characteristics

The most common diagnosis in the elderly

- heterogeneous group of illnesses with the global intellect disorder
- deterioration of some cognitive functions (memory, talk, thought, orientation, discretion)
- personality changes, affectivity, behaviour disorders

Dementia Classification (based on etiology)

- **Primarily degenerative dementia 50-70%**
  Alzheimer senile and presenile – 50-60%; others (m. Parkinson, etc.) – 5-10%
- **Vascular dementia 15-30%**
- **Mixed dementia 10-20%**
- **Lewy body dementia 10-20%**
- **Frontotemporal dem. 3-5%**
- **Secondary dementia 3-5%**

Delirium - characteristics

Def.: Unspecified reaction of the brain on various noxas

Alterations of the mental state – acute and temporary connected with inability to identify and react to environmental changes adequately.

Consciousness is blured and the reduced quality of perception may fluctuate between the extrems – from total vigility to coma.

Epidemiology of delirium

- at home - 65 yrs. old - 1-2%
- at home - over 85 yrs. old - 10-13%
- acute dept. >75 yrs. on admission 10-15%
- acute dept. >75 yrs. during the hospitalization 20-30%
- gerontopsych. and institute for long-term patients (ILP) 30-60%
- after general surgeries-10%; heart-30% and hip up to 50%

Polypharmacotherapy (PPT) definition

- Use of 3 or more drugs regardless of the age
- In CR especially in diagnosis:

  heart failure; atrial fibrilation; DM; stroke and TIA; chr. bronchitis

Pharmacotherapy in the elderly - specifics

1. hanged reaction to drugs ⇒ Changes of pharmacodynamics and -kinetics
2. ↑ AED in the elderly generally
3. ↑ non-compliance of seniors
4. ↑ appearance of pharmaceutical interactions

Iatrogenia

- 30% AED are predictable
- Up to 70% AED are dose dependent
- The treatment should be considered individually („tailor made“)
- AED reactions remind unspecific geriatric syndroms

Other geriatric syndroms

- Sy decondition and hypomobility (sarcopenia)
- Sy anorexia and malnutrition, dehydration
- Sy of dual deficit (sight, hearing)
- Geriatric maladaptive sy
- Sy of mistreatment, neglect and elder abuse
- Sy of the terminal geriatric deterioration - FTT

Weber P.: Euro J Ger, 4, 2002, č. 4, s. 167- 172.

Sy decondition and hypomobility (sarcopenia)

- The principle is the limitation of kinetic activity due to sitting or lying, muscle atrophy of the lower extremities.
- The cause may be the loss of motivation, depression, nutrition disorders, kinetic dyscomfort.

Sy anorexia and malnutrition

- Causes of anorexia: tumors, depression, constipation, inadequate form of food
- Causes of malnutrition: bad denture or dysphagia, absorption disorders, poverty, immobility, dementia or neglect sy

Sy of dual sensory deficit (sight, hearing)

- 65-80 r. at home: 0,5%
- ≥ 85 r. at home: 6%
- With cognitive dysfunction: 6 – 13%
- In nursing institutions: 7 – 25%

SLAETS, JP. The prevalence of combined vision impairment and hearing loss: the importace of comorbidity studies. Ned. Tijdschr. Geneetikol., 2007, 151 (26), p. 1451–1453.

Geriatric maladaptive syndrom

- Psycho-social maladaptation
- Maladjustment to new living conditions *(e.g. nursing home admission, etc.)*.
- Somatization of difficulties *(vertigo, heart palpitation, sweat, etc.)*.
- Drugs often worsen the situation.

Sy of elder abuse, neglect and mistreatment sy – EAN

- Intentional use or threat of use of physical powers or other instrument against himself, other person, against some group etc.
- All kinds of physical, mental and sexual mistreatment and abuse, acts of neglect and suicides and other forms of self-mutilation
- 5 - 20% seniors

Risk Factors of Sy of EAN

- Old age
- Disability
- Loneliness
- Intellectual dysfunction: dementia, depression (> 50%)
- Poverty
- Minorities; Ethnically different races

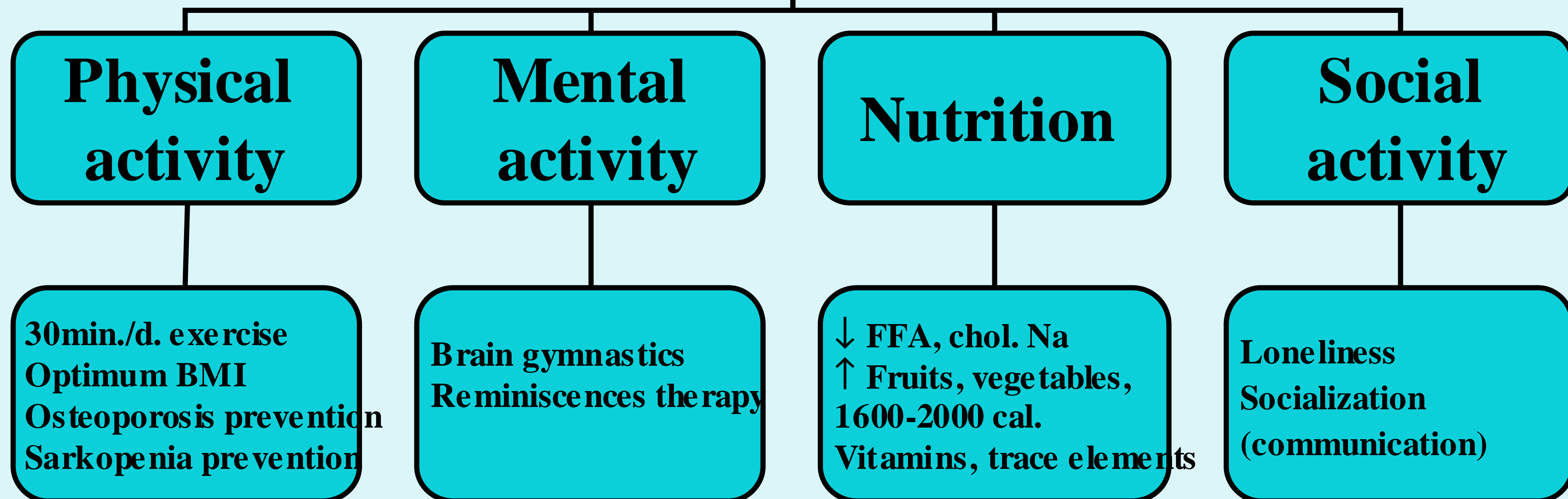
Sy terminal geriatric deterioration - FTT

- ↓ medical and functional status without an explicit pathological reason, refractory to the treatment

- ↑ loss of appetite, slimming, fatigue, activity limitation, apathy - immobility, confusion
- Heading for death up to ¾ cases

- over 85 yrs. it lasts *3-6 months* in average

How to get old in a healthy manner?



Weber P.: Euro Rehab, 12, 2002, č. 2, s. 69- 75.

Conclusion

Not to underestimate the ability to recover

and live independent life

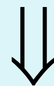
in an acceptable condition.

THM

A geriatric patient during the hospitalization or

Out-patient check-up at GP´s or somewhere else

CGA (incl. MMSE, ADL, etc.)



Geriatric consultation ⇔ multidisciplinary approach

…add life to years not years to life…