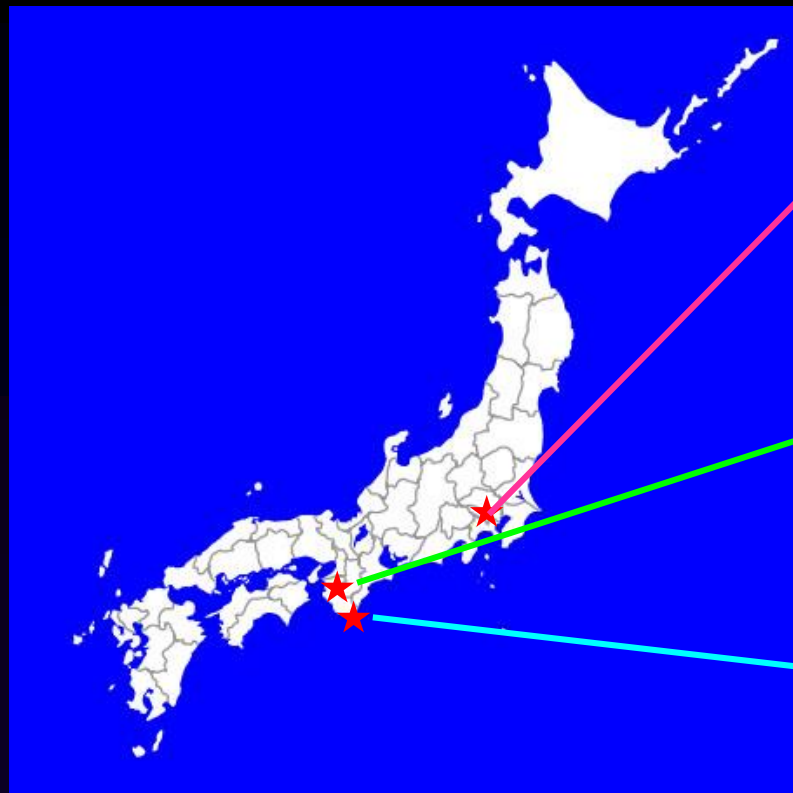# The ROAD Study

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ROAD study

Itabashi-ku, Tokyo
1,350 (Men 465, Women 885: 76.7 years)

Hidakagawa-cho, Wakayama
864 (Men 320, Women 544: 69.2 years)

Taiji-cho, Wakayama
826 (Men 277, Women 549: 61.9 years)

Questionnaire survey > 400 items (medical information, ADL, QOL, Fall etc)

Medical examinations (Pain, reflex, mental status, etc)

Physical function (muscle strength, muscle volume, gait speed, etc)

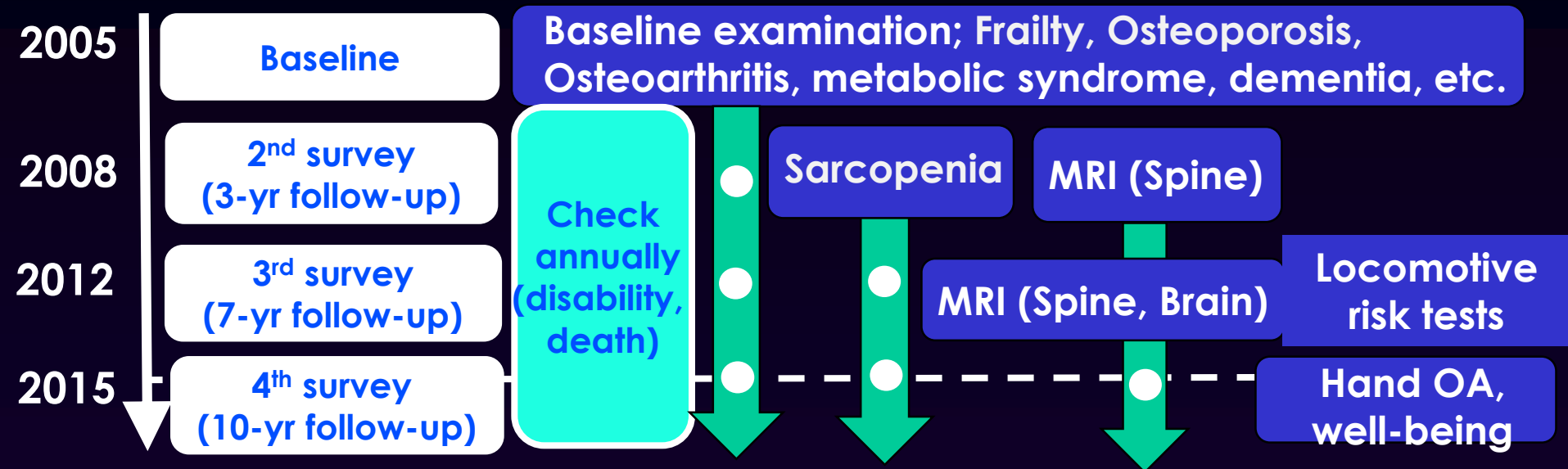**X-rays：knee, spine, hip, hand, MRI (brain, spine), DXA**

Blood & urine samples
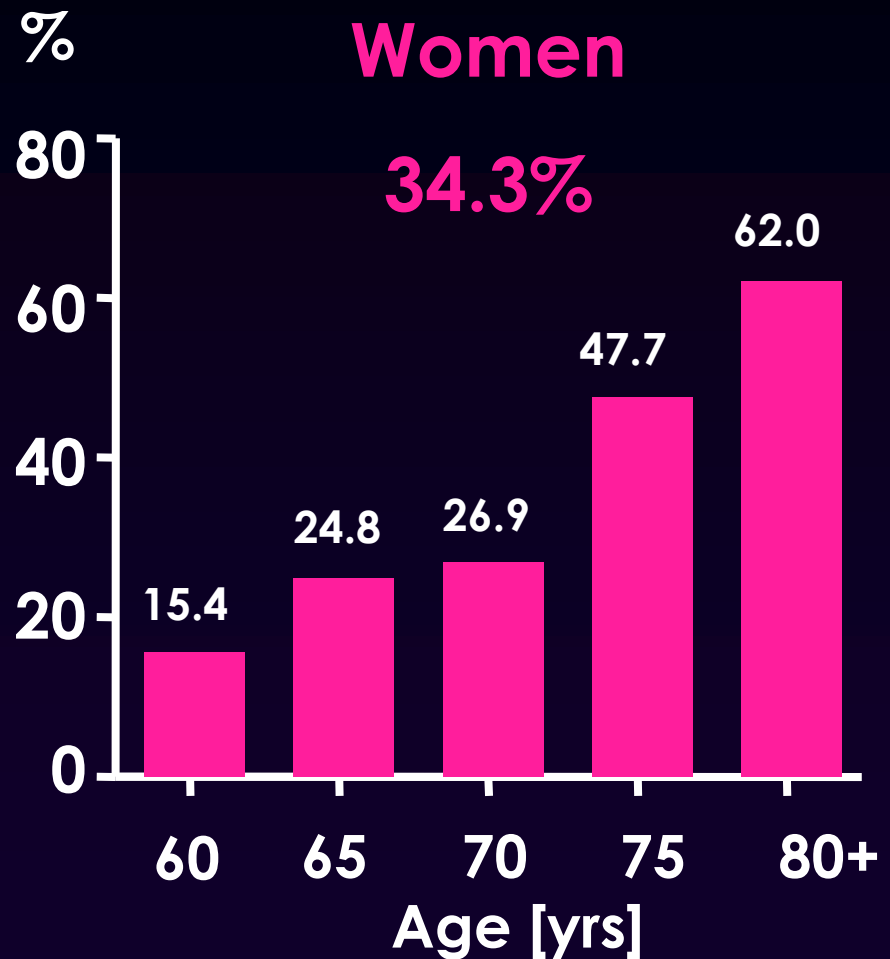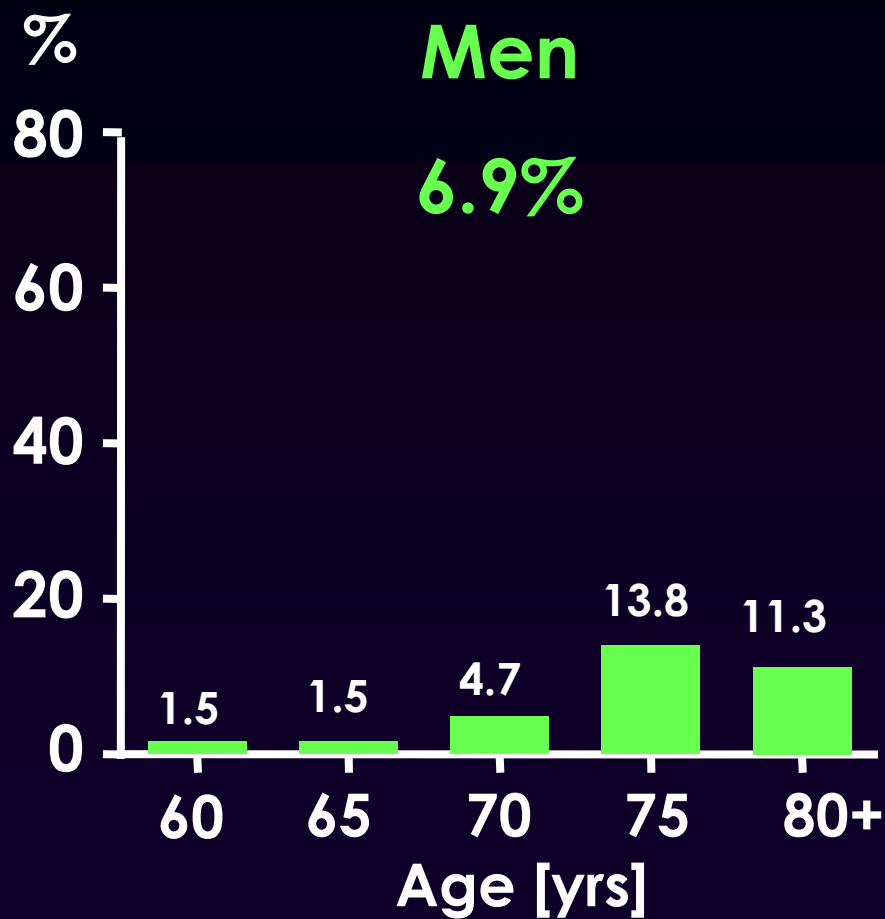
Yoshimura N, et al. Int J Epidemiol 2010

ROAD

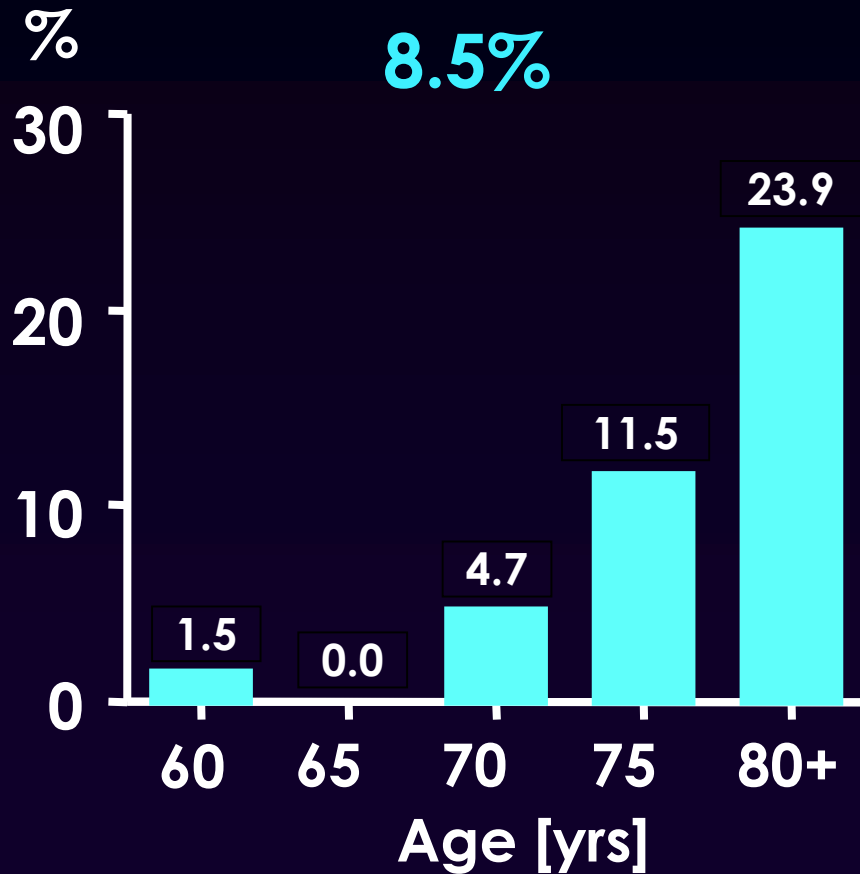# ROAD Study

A large-scale population-based cohort survey

2005	**Baseline**	**Baseline examination; Frailty, Osteoporosis, Osteoarthritis, metabolic syndrome, dementia, etc.**
2008	**2nd survey (3-yr follow-up)**	**Sarcopenia** **MRI (Spine)**
2012	**3rd survey (7-yr follow-up)**	**MRI (Spine, Brain)** **Locomotive risk tests**
2015	**4th survey (10-yr follow-up)**	**Hand OA, well-being**

Check annually (disability, death)

ROAD

Osteoporosis at lumbar spine L2-4 and/or femoral neck (≥60 yrs)

Men 6.9%

Age [yrs]	60	65	70	75	80+
%	1.5	1.5	4.7	13.8	11.3

Women 34.3%

Age [yrs]	60	65	70	75	80+
%	15.4	24.8	26.9	47.7	62.0

Yoshimura N, et al: Osteoporos Int 29, 2181-2190, 2018

ROAD

Prevalence of sarcopenia (≥60 yrs)

Men
8.5%

Women
8.0%

ROAD
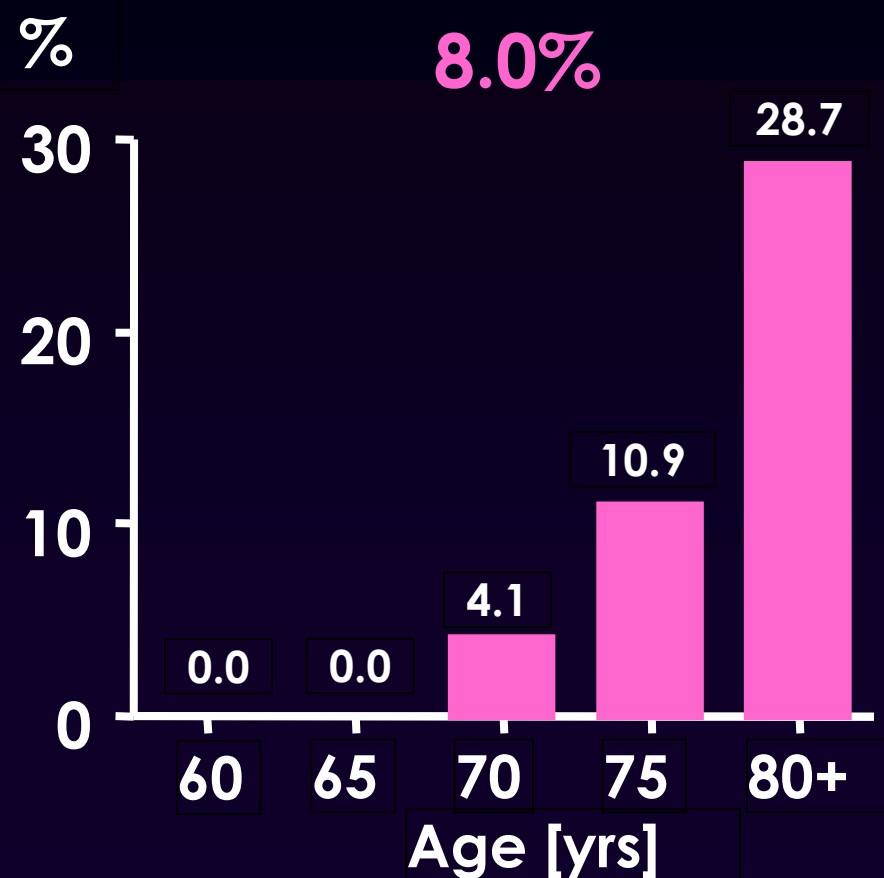
Prevalence of frailty (≥60 yrs)

Men
3.8%

%

	60	65	70	75	80+
	1.5	0.0	1.2	2.3	14.3

Age [yrs]

Women
6.6%

%

	60	65	70	75	80+
	0.7	0.0	4.1	11.9	19.5

Age [yrs]

Yoshimura N, et al: Osteoporos Int 29, 2181-2190, 2018

ROAD
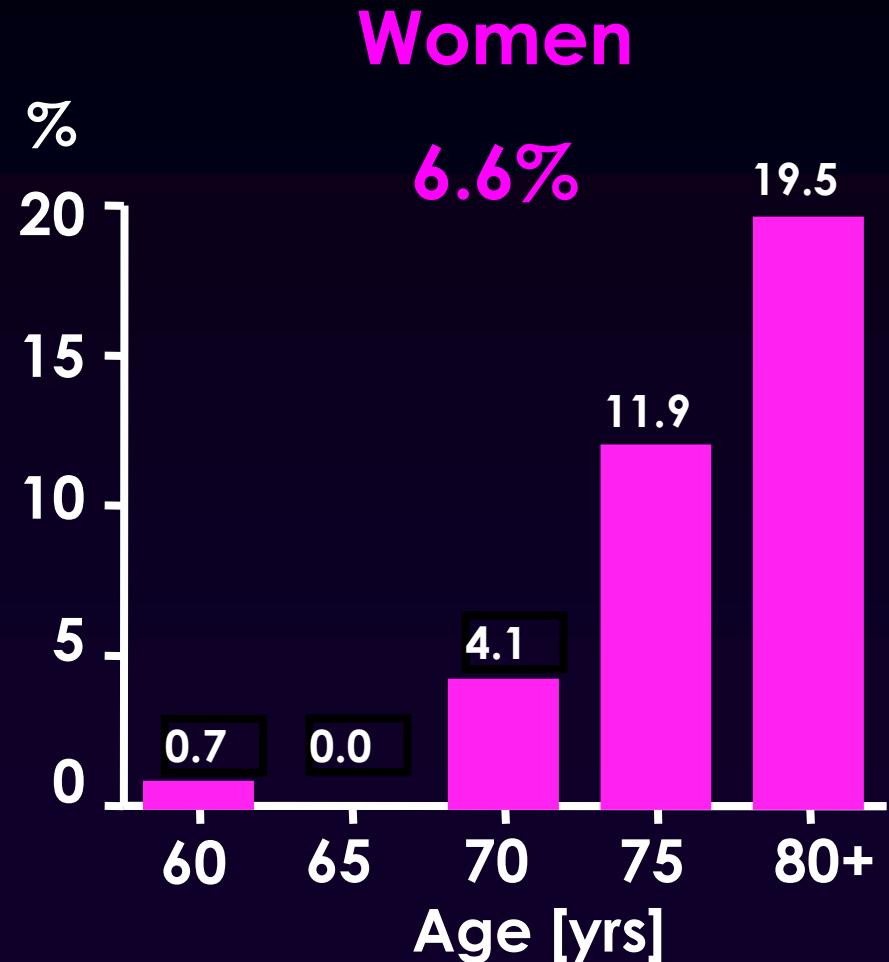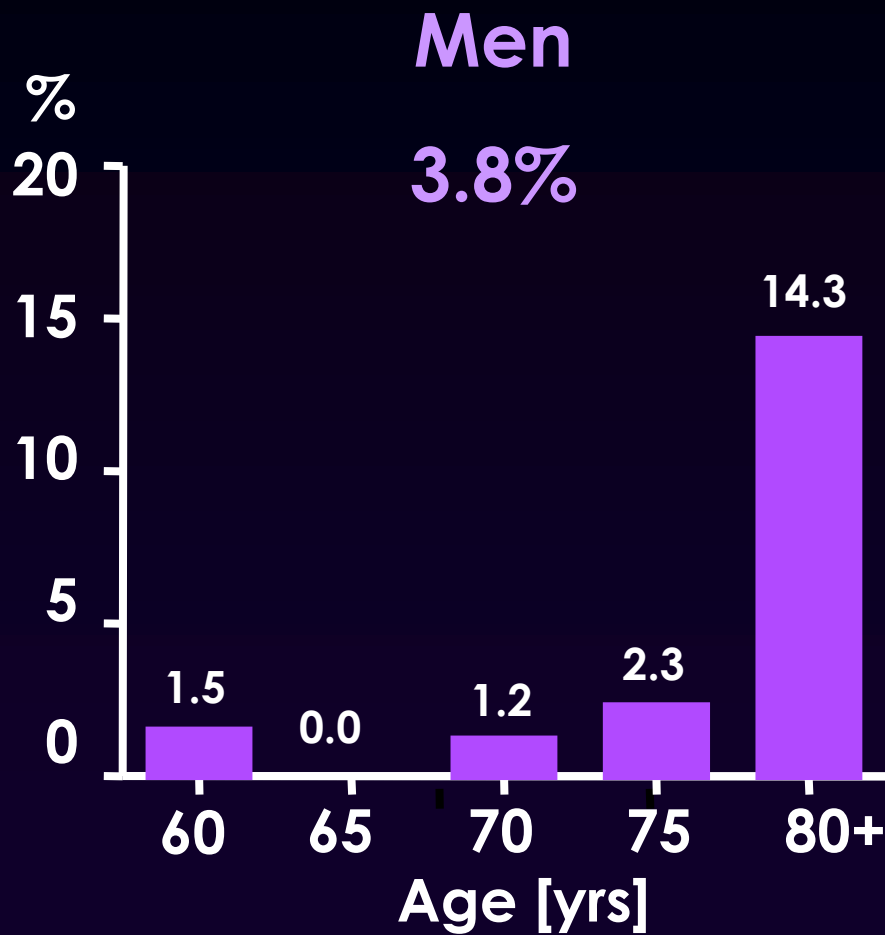
Co-existence of Frailty, Sarcopenia and Osteoporosis (≥60 yrs)

Yoshimura N, et al: Osteoporos Int 29, 2181-2190, 2018
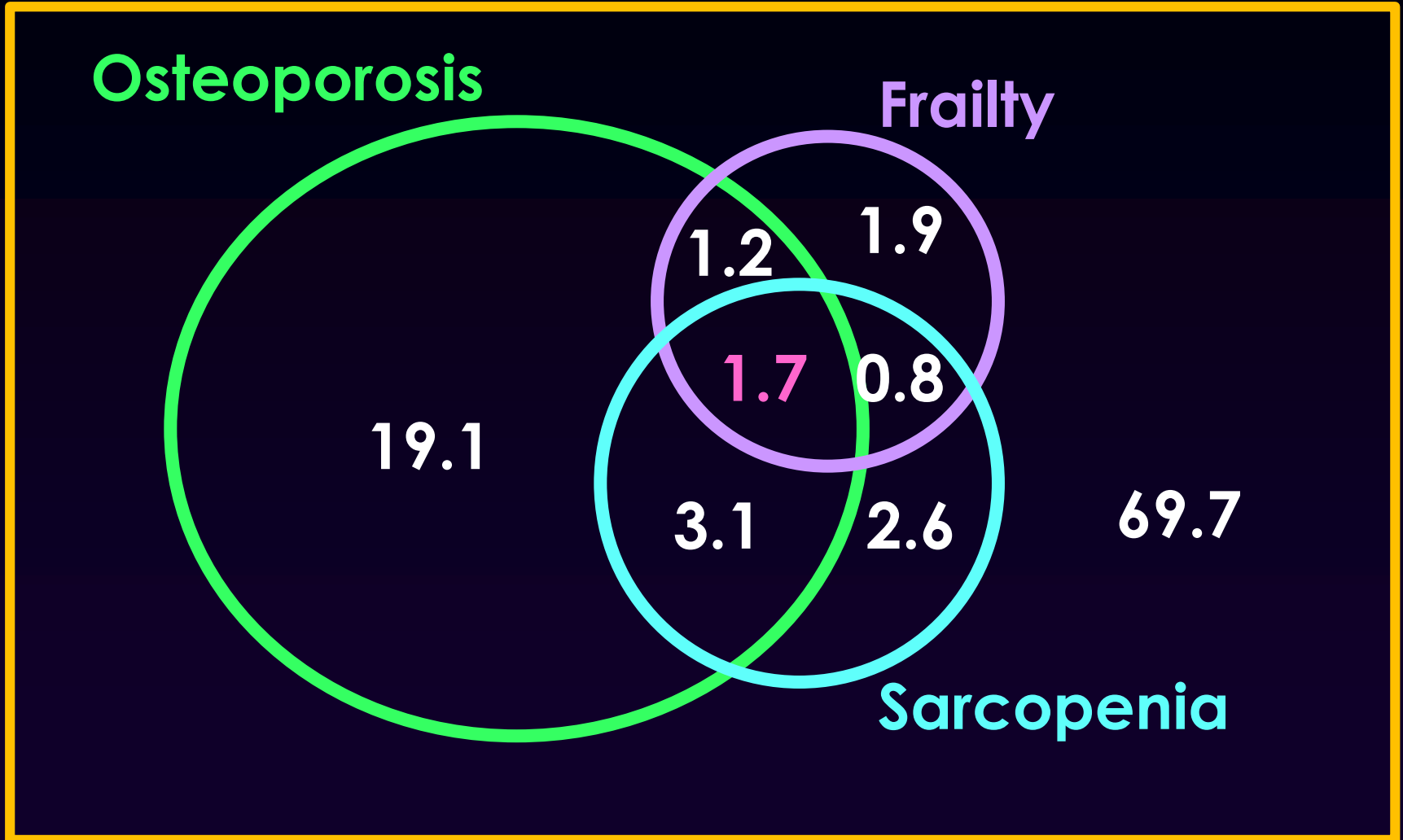
Mutual association among osteoporosis, sarcopenia, and frailty (≥60 yrs)
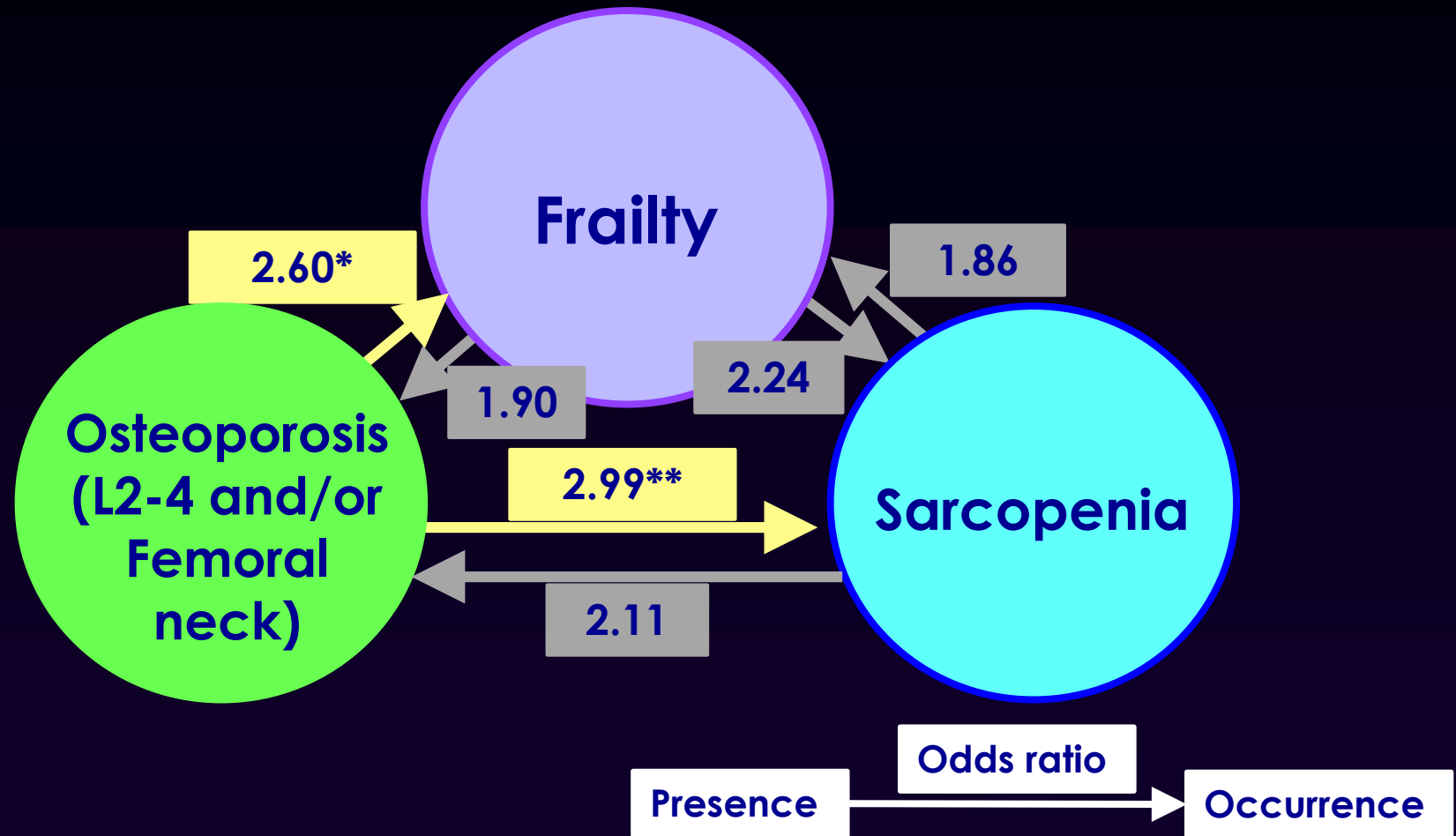
*:p < 0.05, * *: p < 0.01
Logistic regression analysis was performed uafter adjustment for age, gender, residing area, emaciation, smoking and alcohol drinking.
Yoshimura N, et al: Osteoporos Int 29, 2181-2190, 2018

Summary

1. The ROAD study was started in 2005, and 3-, 7- and 10-year follow-ups were completed.

2. The epidemiological indices of musculoskeletal disorders, such as, osteoporosis, sarcopenia, and frailty were clarified.

3. After adjusting for confounding factors, logistic regression analysis indicated that osteoporosis was significantly raised the risk of the occurrence of sarcopenia, and frailty.

ROAD