Which is more important for elderly health: The ability to chew or the number of teeth?

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Purpose of Study

- Examine effect of ability to chew on elderly health
- Examine effect of number of teeth on elderly health
- Compare the results

4 Possible Outcomes

- Ability to Chew (Y) and Number of teeth (Y)
- Ability to Chew (Y) and Number of teeth (N)
- Ability to Chew (N) and Number of teeth (N)
- Ability to Chew (N) and Number of teeth (Y)

Data

- Nihon University Japanese Longitudinal Study of Aging (NUJLSOA)
- Conducted in 1999, 2001, 2003
- Nationally representative sample of age 65 and over in 1999
- Sample Size for this study
  - Males: about 1800 Females: about 2400

Definition of Health

- **Inactive**: unable or very difficult to perform, at least, one of 7ADLs or 7 IADLs
- **Active**: otherwise
  - 7 ADL: bathing, dressing, eating, getting in/out of bed, walking, going outside, toileting
  - 7 IADL: preparing for own meal, shopping, managing money, making phone, doing light house work, using public transportation, medication

Measure of Ability to Chew

Question (1999): The following foods are ordered from hardest to softest to chew. What is the hardest group you are able to bite and chew? If you are using dentures, please respond as if you were eating with your dentures.

List of Foods

1. Saki ika or takuan (Hard dried squid or pickled radish)

Group A

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2. Boiled pork meat (from the rump), raw carrots, or celery
3. Deep-fried tofu, pickled octopus, pickled Chinese cabbage, or raisins
4. Rice, apples, fish cake, or boiled asparagus
5. Bananas, boiled beans, canned corned beef, or wafers
6. Unable to chew the foods listed

Group B

Number of Teeth

Question (1999): How many original teeth do you (subject) have? Adults have 28 natural adult teeth (32 including wisdom teeth) and 0 for full dentures. Prosthetic teeth with roots should be included in the number. For bridges, the artificial tooth should not be counted; however, natural teeth acting as supports should be.

20 or more VS **19 or less**

Methods

- Compute Active Life Expectancy using Multistate Life Table Method
  - Population-based and Status-based
- by Ability to chew (Groups A and B)
- by Number of teeth (20+ VS 19-)

- IMaCh was used to compute ALE

LE by Ability to Chew
Population-based: Both Sex

	Group A		Group B		Statistical Test
	LE	SE	LE	SE	
65	21.6	0.49	19.4	0.59	*
70	17.6	0.47	15.7	0.50	ns
75	13.9	0.48	12.3	0.46	ns
80	10.5	0.48	9.2	0.44	ns
85	7.5	0.49	6.7	0.44	ns

ALE by Ability to Chew
Population-based: Both Sex

	Group A		Group B		Statistical Test
	ALE	SE	ALE	SE	
65	18.0	0.36	15.2	0.46	**
70	14.0	0.33	11.4	0.38	**
75	10.2	0.32	8.0	0.33	**
80	6.9	0.31	5.0	0.28	*
85	4.1	0.30	2.7	0.24	*

LE by Number of Teeth
Population-based: Both Sex

	20 or more		19 or less		Statistical Test
	LE	SE	LE	SE	
65	23.0	0.98	20.2	0.42	*
70	18.9	0.97	16.4	0.36	ns
75	14.9	0.96	13.0	0.36	ns
80	11.3	0.94	9.8	0.36	ns
85	8.1	0.88	7.1	0.39	ns

ALE by Number of Teeth
Population-based: Both Sex

	20 or more		19 or less		Statistical Test
	ALE	SE	ALE	SE	
65	19.6	0.72	16.3	0.33	**
70	15.5	0.70	12.5	0.27	**
75	11.5	0.67	8.9	0.24	**
80	8.0	0.63	5.8	0.23	*
85	5.0	0.56	3.5	0.22	*

Answer to the Question

BOTH Matter!!

for ALE based on the grouping we used

Future Plan

- In the present study we consider dental condition only at the baseline. Dental condition could change over time. We plan to incorporate this change in our analyses in the future.