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1 **Table 1. Characteristics of young participants: age, gender and physical strengths**

<b>Age</b>	<b>Gender</b>	<b>Dominant hand grip force (kg)</b>	<b>Tongue pressure (kPa)</b>	<b>Bite force (kg)</b>
21	Female	40.10	51.67	7.16
22	Female	32.87	26	7.67
21	Female	35.17	64.33	6.15
21	Female	27.1	30.33	5.69
21	Female	31.17	54.67	6.04
18	Female	28.73	69	5.80
24	Male	56.65	73.33	7.13
21	Male	50.03	46.67	6.18
22	Male	40.93	53.33	6.12
21	Male	43.13	65.67	6.08
25	Male	47.43	68.67	6.87

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16 **Table 2. Correlation matrix with the measured hand force, tongue pressure and bite**  
 17 **force (N=11).**

Variables	Tongue		
	Hand grip force (kg)	pressure (kPa)	Bite force (kg)
Hand grip force (kg)	<b>1</b>	0.461	0.469
Tongue pressure (kPa)	0.461	<b>1</b>	-0.084
Bite force (kg)	0.469	-0.084	<b>1</b>

Values in bold are different from 0 with a significance level  $\alpha=0.05$

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33 **Table 3. Fracture properties of the different food products**

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	Area (N.sec)	Number of peaks	Gradient (N/sec)
Pineapple	25.77 <sup>abc</sup> (8.35)	5.40 <sup>a</sup> (1.67)	12.62 <sup>ab</sup> (8.23)
Mild Cheddar	21.27 <sup>ab</sup> (2.88)	1.60 <sup>a</sup> (0.55)	5.43 <sup>a</sup> (1.01)
Soft cheddar	20.14 <sup>ab</sup> (2.62)	1.80 <sup>a</sup> (0.45)	4.65 <sup>a</sup> (0.54)
Hard Cheddar	42.65 <sup>abcd</sup> (9.84)	2.60 <sup>a</sup> (2.07)	28.61 <sup>ab</sup> (6.23)
Mozzerella	6.59 <sup>a</sup> (1.60)	1.80 <sup>a</sup> (0.84)	13.59 <sup>ab</sup> (27.59)
Cheese paste	2.57 <sup>a</sup> (0.20)	1.00 <sup>a</sup> (0.00)	0.46 <sup>a</sup> (0.02)
Pear	82.71 <sup>c</sup> (18.85)	16.40 <sup>b</sup> (6.54)	43.59 <sup>b</sup> (14.67)
Carrot	372.20 <sup>fcde</sup> (54.56)	27.60 <sup>bc</sup> (5.77)	190.21 <sup>c</sup> (49.16)
Apple	61.17 <sup>ab</sup> (15.08)	32.00 <sup>c</sup> (2.92)	27.69 <sup>ab</sup> (10.26)
Banana	13.59 <sup>ab</sup> (3.67)	3.20 <sup>a</sup> (0.84)	6.41 <sup>a</sup> (2.62)
Watermelon	18.95 <sup>ab</sup> (5.67)	28.75 <sup>a</sup> (7.09)	9.28 <sup>ab</sup> (1.97)
Canned potato	18.78 <sup>ab</sup> (5.55)	5.40 <sup>a</sup> (0.55)	10.10 <sup>ab</sup> (0.89)
Gherkin	64.44 <sup>de</sup> (16.64)	5.40 <sup>a</sup> (2.30)	25.48 <sup>ab</sup> (7.05)
Baby sweetcorn	47.40 <sup>abcde</sup> (20.05)	2.80 <sup>a</sup> (0.84)	12.56 <sup>ab</sup> (4.07)
Heart of palm	24.81 <sup>abc</sup> (22.85)	3.40 <sup>a</sup> (2.07)	12.99 <sup>ab</sup> (11.44)

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36 Values in parentheses are standard deviations. Means (N=5) in the same column without a

37 common letter differ ( $p < 0.05$ ) according to the Tukey test.

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41 **Table 4. Correlation matrix (Pearson) with the food oral processing characteristics and**  
 42 **the fracture profile of the different food products (N=11).**

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Variables	N.chew	N.swallow	Time in mouth	Area under the curve	N. peaks	Max peak	Gradient
N.chew	<b>1</b>	<b>0.913</b>	<b>0.986</b>	<b>0.893</b>	<b>0.903</b>	<b>0.894</b>	<b>0.914</b>
N. swallow		<b>1</b>	<b>0.966</b>	0.672	0.705	0.671	0.697
Time in mouth			<b>1</b>	<b>0.815</b>	<b>0.830</b>	<b>0.816</b>	<b>0.840</b>
Area				<b>1</b>	<b>0.988</b>	<b>1.000</b>	<b>0.998</b>
N. peaks					<b>1</b>	<b>0.986</b>	<b>0.986</b>
Max peak						<b>1</b>	<b>0.998</b>
Gradient							<b>1</b>

Values in bold are different from 0 with a significance level  $\alpha=0.05$

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