Participant Flow

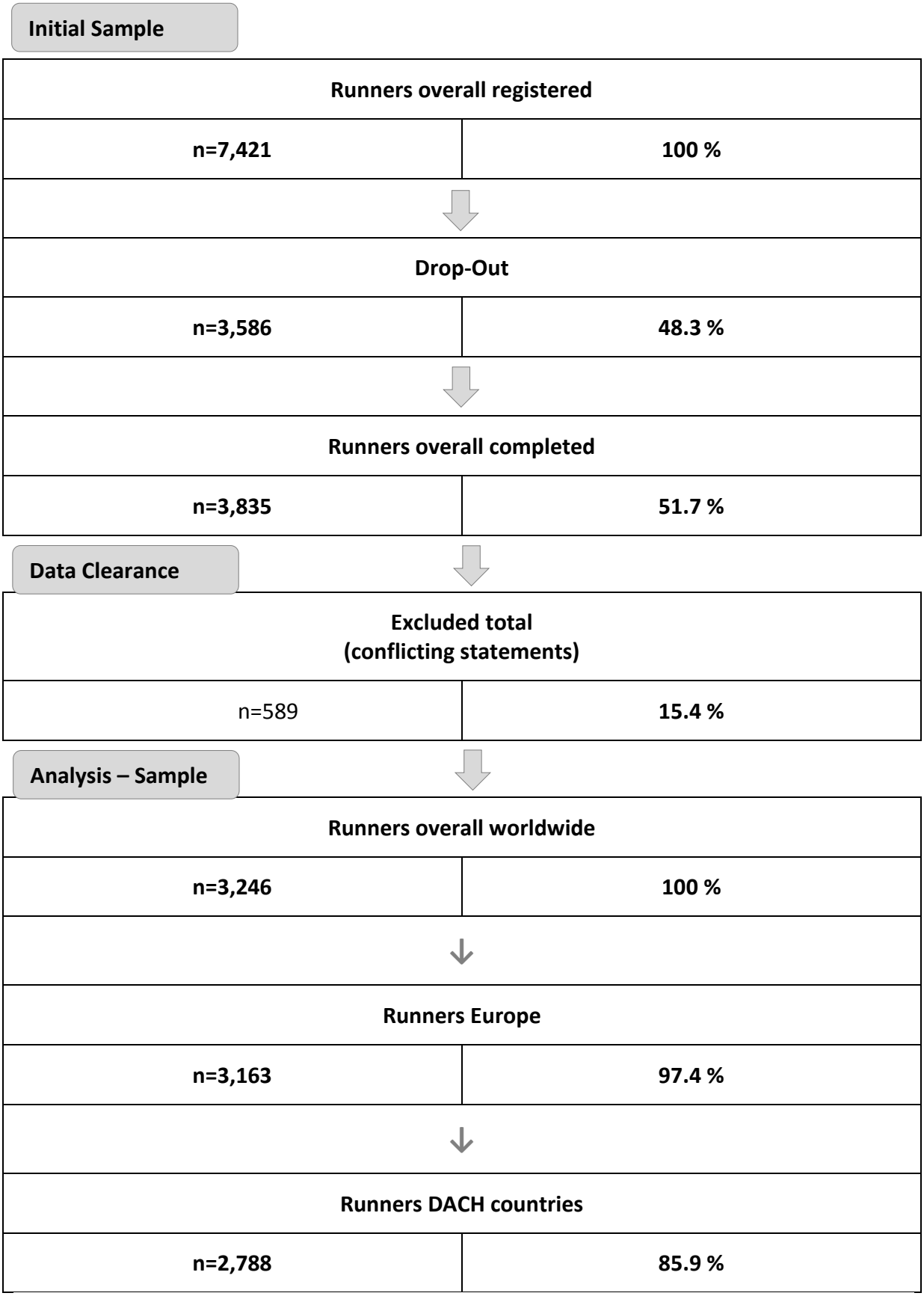

Figure 1. Study Flow Chart of Participants Enrollment for The NURMI Study Step 1 – Preliminary Study. DACH countries: D – Germany, A – Austria, CH – Switzerland.

Baseline characteristics

Table 1. Participants Baseline Characteristics of European female and male runners (n=3,163) at all distances in the NURMI Study Step 1. BW – Body Weight. BMI_{CALC} – Body Mass Index calculated.

	Total	
	Female	**Male**
Numbers (%)	1,779 (56.2 %)	1,384 (43.8 %)
Mean (± SD)		
Age (years)	35.3 ± 10.4	39.7 ± 11.1
BW (kg)	60.7 ± 7.9	75.0 ± 8.6
Height (m)	1.68 ± 0.6	1.80 ± 0.6
BMI_{CALC} (kg/m²)	21.5 ± 2.5	23.1 ± 2.2

Outcome measures

Table 2. The Prevalence of omnivores, vegetarians and vegans in running events in the NURMI Study Step 1. Runners Europe (n=3,163) at all distances. BW – Body Weight. BMI_{CALC} – Body Mass Index calculated.

	Dietary Subgroups		
	omnivorous	**vegetarian**	**vegan**
Numbers (%)	1,434 (45.3 %)	665 (21.0 %)	1,065 (33.7 %)
Female	673 (37.8 %)	431 (24.2 %)	675 (37.9 %)
Male	761 (55.0 %)	234 (16.9 %)	389 (28.1 %)
Mean (± SD)			
Age (years)	39.2 ± 11.1	36.2 ± 11.0	35.2 ± 10.2
BW (kg)	69.0 ± 10.9	65.0 ± 10.5	65.3 ± 10.4
Height (m)	1.74 ± 0.9	1.72 ± 0.9	1.72 ± 0.9
BMI_{CALC} (kg/m²)	22.7 ± 2.5	21.8 ± 2.4	21.9 ± 2.5

Table 3. The Quality of Life (WHOQOL-BREF 26 questionnaire) in female (n=159) and male (n=122) runners at race distances Half-Marathon or Marathon/Ultramarathon (n=173), and controls (n=108) at 10 kilometers race distance in the NURMI Study Step 2. Quality of Life Domains: DOM1 – Physical Health, DOM2 – Psychological Health, DOM3 – Social Relationships, DOM4 – Environment.

	Gender Differences	
	Female	**Male**
DOM1 – Physical Health		
Mean Score ± SD (%)	17.6 ± 1.4 (85.1 %)	18.0 ± 1.3 (87.2 %)
Main effects		
diet	p=0.248, η^2=0.009	p=0.844, η^2=0.009
distance	p=0.586, η^2=0.007	p=0.586, η^2<0.003
Interaction dietxdistance	p=0.346, η^2=0.014	p=0.060, η^2=0.047
DOM2 – Psychological Health		
Mean Score ± SD (%)	16.0 ± 2.1 (74.7 %)	16.8 ± 1.8 (80.2 %)
Main effects		
diet	p=0.164, η^2=0.013	p=0.246, η^2=0.012
distance	p=0.379, η^2=0.013	p=0.818, η^2=0.003
Interaction dietxdistance	p=0.672, η^2=0.005	p=0.026, η^2=0.061
DOM3 – Social Health		
Mean Score ± SD (%)	15.5 ± 2.6 (71.6 %)	15.4 ± 2.9 (71.0 %)
Main effects		
diet	p=0.691, η^2=0.001	p=0.047, η^2=0.034
distance	p=0.986, η^2<0.001	p=0.838, η^2=0.034
Interaction dietxdistance	p=0.490, η^2=0.009	p=0.112, η^2=0.037
DOM4 – Enviroment		
Mean Score ± SD (%)	16.8 ± 1.6 (80.1 %)	17.0 ± 1.7 (81.0 %)
Main effects		
diet	p=0.043, η^2=0.027	p=0.358, η^2=0.007
distance	p=0.014, η^2=0.054	p=0.121, η^2=0.036
Interaction dietxdistance	p=0.925, η^2=0.001	p=0.013, η^2=0.072

Acknowledgement: The authors are grateful to the WHO, Health Statistics and Health Information Systems (HSI), Geneva Switzerland, for the permission (November 25, 2014) to use the WHOQOL-BREF form (26 items) in order to study the Quality of Life.

Table 4. Associations of health-related items on Health Status Dimensions: Body Mass, Smoking and Perceived Stress, Chronic Diseases, Regular Medication and Dietary Supplement Intake, Food Choice, Intake of Enhancement Substances, Use of Healthcare Services/ Healthcare Utilizaton in female and male, omnivorous, vegetarian/vegan runners (n=173) at race distances Half-Marathon or Marathon/Ultramarathon, and controls (n=108) at 10 kilometers race distance in the NURMI Study Step 2. BW – Body Weight. BMI_{CALC} – Body Mass Index calculated.

	Health Status associated to …		
	Gender	**Diet Choice**	**Race Distance**
Body Mass (mean ± SD)			
BW (kg) and BMI_{CALC} (kg/m^2)			
female	59.8 ± 8.3, 21.4 ± 2.5		
male	73.3 ± 8.3, 22.9 ± 2.2		
omnivorous	67.9 ± 10.8, 22.6 ± 2.4		
vegetarian/vegan	63.9 ± 10.0, 21.6 ±2.5		
Change in BW due to change in …			
ϖ diet	**χ^2=0.757,** p=0.685, **ϕ**=0.052	**χ^2=0.112,** p=0.945, **ϕ**=0.020	ϖ**χ^2=5.054,** p=0.282, **ϕ**=0.134
°running training	°**χ^2=1.379,** p=0.502, **ϕ**=0.070	**χ^2=1.512,** p=0.469, **ϕ**=0.073	**χ^2=6.285,** p=0.179, **ϕ**=0.150
Smoking and Stress			
current smoking	**χ^2=5.503,** p=0.064, **ϕ**=0.140	**χ^2=0.095,** p=0.954, **ϕ**=0.018	**χ^2=3.412,** p=0.491, **ϕ**=0.110
former smoking	**χ^2=2.957,** p=0.228, **ϕ**=0.103	**χ^2=0.062,** p=0.970, **ϕ**=0.015	**χ^2=5.655,** p=0.226, **ϕ**=0.142
⌂perceived pressure or stress	**χ^2=3.538,** p=0.171, **ϕ**=0.112	**χ^2=3.283,** p=0.350, **ϕ**=0.108	⌂**χ^2=12.493,** p=0.014, **ϕ**=0.211

Chronic Diseases			
heart disease requiring treatment	**χ^2=1.596,** p=0.450, **ϕ**=0.075	**χ^2=1.325,** p=0.516, **ϕ**=0.059	**χ^2=6.149,** p=0.188, **ϕ**=0.148
heart attack	**χ^2=1.596,** p=0.450, **ϕ**=0.075	**χ^2=1.325,** p=0.516, **ϕ**=0.059	**χ^2=6.149,** p=0.188, **ϕ**=0.148
cancer	**χ^2=0.347,** p=0.741, **ϕ**=0.035	**χ^2=1.182,** p=0.554, **ϕ**=0.065	**χ^2=7.086,** p=0.131, **ϕ**=0.159
diabetes mellitus type 1	**χ^2=2.888,** p=0.236, **ϕ**=0.101	**χ^2=0.061,** p=0.970, **ϕ**=0.015	**χ^2=9.276,** p=0.055, **ϕ**=0.182
diabetes mellitus type 2	**χ^2=0.344,** p=0.842, **ϕ**=0.035	**χ^2=2.633,** p=0.268, **ϕ**=0.097	**χ^2=3.669,** p=0.453, **ϕ**=0.114
hyperthyroidism	**χ^2=0.347,** p=0.841, **ϕ**=0.035	**χ^2=1.182,** p=0.554, **ϕ**=0.065	**χ^2=7.763,** p=0.101, **ϕ**=0.166
[x]hypothyroidism	[x]**χ^2=8.515,** p=0.014, **ϕ**=0.174	**χ^2=0.402,** p=0.818, **ϕ**=0.038	**χ^2=3.568,** p=0.468, **ϕ**=0.113
allergies	**χ^2=1.094,** p=0.579, **ϕ**=0.062	**χ^2=1.582,** p=0.453, **ϕ**=0.075	**χ^2=7.828,** p=0.098, **ϕ**=0.167
intolerances	**χ^2=5.082,** p=0.079, **ϕ**=0.134	**χ^2=3.079,** p=0.215, **ϕ**=0.105	**χ^2=6.688,** p=0.153 **ϕ**=0.154
Regular Medication and Dietary Supplement Intake			
[#]thyroid	[#]**χ^2=7.756,** p=0.021, **ϕ**=0.166	**χ^2=4.561,** p=0.335, **ϕ**=0.127	**χ^2=1.661,** p=0.436, **ϕ**=0.077
medication for high blood pressure	**χ^2=2.267,** p=0.322, **ϕ**=0.090	**χ^2=3.484,** p=0.480, **ϕ**=0.111	**χ^2=4.458,** p=0.108, **ϕ**=0.126
medication for high cholesterol/ other blood serum lipids	**χ^2=2.888,** p=0.236, **ϕ**=0.101	**χ^2=4.487,** p=0.344, **ϕ**=0.126	**χ^2=2.633,** p=0.268, **ϕ**=0.097
[+, Δ]hormones (by females only)	[+]**χ^2=35.628,** p<0.01, **ϕ**=0.356	**χ^2=0.068,** p=0.967, **ϕ**=0.016	[Δ]**χ^2=11.381,** p=0.023, **ϕ**=0.201
[*]Dietary supplement intake	[*]**χ^2=8.554,** p=0.014, **ϕ**=0.174	**χ^2=0.032,** p=0.984, **ϕ**=0.011	**χ^2=3.914,** p=0.418, **ϕ**=0.118
Food Choice			
Food or ingredients chosen because they are …			
healthy	**χ^2=1.651,** p=0.438, **ϕ**=0.077	**χ^2=2.130,** p=0.345, **ϕ**=0.087	**χ^2=4.081,** p=0.395, **ϕ**=0.121
health-promoting	**χ^2=0.317,** p=0.853, **ϕ**=0.034	**χ^2=0.519,** p=0.771, **ϕ**=0.043	**χ^2=4.777,** p=0.311, **ϕ**=0.130
[◊]good for maintaining health	**χ^2=0.877,** p=0.642, **ϕ**=0.056	[◊]**χ^2=8.343,** p=0.015, **ϕ**=0.172	**χ^2=5.356,** p=0.253, **ϕ**=0.138

Food or ingredients chosen in order to avoid …			
refined sugar	**χ^2=5.032,** p=0.081, **ϕ**=0.134	**χ^2=0.439,** p=0.803, **ϕ**=0.040	**χ^2=4.712,** p=0.318, **ϕ**=0.129
sweetener	**χ^2=0.316,** p=0.854, **ϕ**=0.034	**χ^2=0.337,** p=0.845, **ϕ**=0.035	**χ^2=7.150,** p=0.128, **ϕ**=0.160
fat in general	**χ^2=1.287,** p=0.526, **ϕ**=0.068	**χ^2=0.405,** p=0.817, **ϕ**=0.038	**χ^2=5.823,** p=0.213, **ϕ**=0.144
saturated fats	**χ^2=1.171,** p=0.557, **ϕ**=0.056	**χ^2=0.620,** p=0.733, **ϕ**=0.047	**χ^2=3.323,** p=0.505, **ϕ**=0.109
$^{\Phi}$cholesterol	**χ^2=0.536,** p=0.765, **ϕ**=0.044	$^{\Phi}$**χ^2=9.002,** p=0.011, **ϕ**=0.179	**χ^2=3.605,** p=0.462, **ϕ**=0.113
products made with white flour	**χ^2=2.450,** p=0.294, **ϕ**=0.093	**χ^2=0.238,** p=0.888, **ϕ**=0.029	**χ^2=8.569,** p=0.073, **ϕ**=0.175
sweet things	**χ^2=1.913,** p=0.384, **ϕ**=0.083	**χ^2=2.665,** p=0.264, **ϕ**=0.097	**χ^2=8.549,** p=0.073, **ϕ**=0.174
$^{\Psi}$nibbles	**χ^2=3.637,** p=0.162, **ϕ**=0.114	**χ^2=0.030,** p=0.985, **ϕ**=0.010	$^{\Psi}$**χ^2=11.354,** p=0.023, **ϕ**=0.201
alcohol	**χ^2=0.973,** p=0.615, **ϕ**=0.059	**χ^2=0.038,** p=0.981, **ϕ**=0.012	**χ^2=4.618,** p=0.329, **ϕ**=0.128
$^{\Phi}$caffeine or other stimulants	**χ^2=2.205,** p=0.332, **ϕ**=0.089	$^{\Phi}$**χ^2=8.302,** p=0.016, **ϕ**=0.172	**χ^2=6.027,** p=0.197, **ϕ**=0.146
Food or ingredients chosen because they are high in …			
vitamins	**χ^2=0.888,** p=0.641, **ϕ**=0.056	**χ^2=0.055,** p=0.973, **ϕ**=0.014	**χ^2=3.667,** p=0.453, **ϕ**=0.114
minerals/trace elements	**χ^2=0.636,** p=0.728, **ϕ**=0.048	**χ^2=0.897,** p=0.639, **ϕ**=0.056	**χ^2=3.571,** p=0.467, **ϕ**=0.113
antioxidants	**χ^2=3.192,** p=0.203, **ϕ**=0.107	**χ^2=1.733,** p=0.420, **ϕ**=0.079	**χ^2=4.938,** p=0.294, **ϕ**=0.133
□phytochemicals	□**χ^2=8.739,** p=0.013, **ϕ**=0.176	**χ^2=1.582,** p=0.453, **ϕ**=0.075	**χ^2=5.143,** p=0.273, **ϕ**=0.135
fibre	**χ^2=4.042,** p=0.133, **ϕ**=0.120	**χ^2=0.135,** p=0.935, **ϕ**=0.022	**χ^2=3.285,** p=0.511, **ϕ**=0.108
Intake of enhancement substances			
everyday life/at work/during sport	**χ^2=0.336,** p=0.953, **ϕ**=0.035	**χ^2=0.732,** p=0.589, **ϕ**=0.052	**χ^2=8.474,** p=0.205, **ϕ**=0.174
to cope with stress	**χ^2=2.503,** p=0.475, **ϕ**=0.094	**χ^2=0.236,** p=0.972, **ϕ**=0.029	**χ^2=10.118,** p=0.120, **ϕ**=0.190
Use of Healthcare Services/Utilization			
Use of regular/routine health check-up´s	**χ^2=1.171,** p=0.557, **ϕ**=0.065	**χ^2=0.281,** p=0.869, **ϕ**=0.032	**χ^2=6.834,** p=0.145, **ϕ**=0.156
Frequency of …			
physicians consultations	**χ^2=9.569,** p=0.214, **ϕ**=0.185	**χ^2=10.773,** p=0.149, **ϕ**=0.196	**χ^2=11.305,** p=0.662, **ϕ**=0.201
use of regular/routine health check-up´s	**χ^2=6.818,** p=0.078, **ϕ**=0.156	**χ^2=2.718,** p=0.437, **ϕ**=0.098	**χ^2=9.324,** p=0.156, **ϕ**=0.182

Table 5. Runtime and Motives of female and male, omnivorous, vegetarian and vegan runners (n=58) in taking part in running events at race distances Half-Marathon (HM: n=33) and Marathon (M: n=25) in the NURMI Study Step 3.

	Dietary Subgroup		
	omnivorous	**Vegetarian**	**vegan**
Numbers	**20 (34.5 %)**	**13 (22.4 %)**	**25 (43.1 %)**
Female	9 (45.0 %)	6 (46.2 %)	17 (68.0 %)
Male	11 (55.0 %)	7 (53.8 %)	8 (32.0 %)
HM	14 (70.0 %)	6 (46.2 %)	13 (52.0 %)
M	6 (30.0 %)	7 (53.8 %)	12 (48.0 %)
Mean (± SD)			
Age (years)	38.8 ± 9.5	40.9 ± 8.6	41.3 ± 13.4
BW (kg)	70.5 ± 11.2	63.5 ± 7.2	61.9 ± 9.4
Height (m)	1.74 ± 0.09	1.74 ± 0.07	1.71 ± 0.08
BMI_{CALC} (kg/m²)	23.1 ± 2.6	21.0 ± 2.8	21.1 ± 1.9
Runtime and Motivation of participation in …			
HM	01:58:47 ± 00:25:23	01:45:18 ± 00:14:33	01:48:41 ± 00:13:11
*__Doing it__	8 (57.1 %)	1 (16.7 %)	1 (7.7 %)
Specific time	6 (42.9 %)	4 (66.6 %)	12 (92.3 %)
Specific placing	/	1 (16.7 %)	/
M	03:54:13 ± 00:46:17	03:49:33 ± 00:35:15	04:07:48 ± 00:37:59
*__Doing it__	3 (50.0 %)	1 (14.3 %)	5 (41.7 %)
Specific time	3 (50.0 %)	6 (85.7 %)	7 (58.3 %)
Specific placing	/	/	/

Adverse Events

There were no adverse events associated with this trial.