

Graphical scheme of the study design:

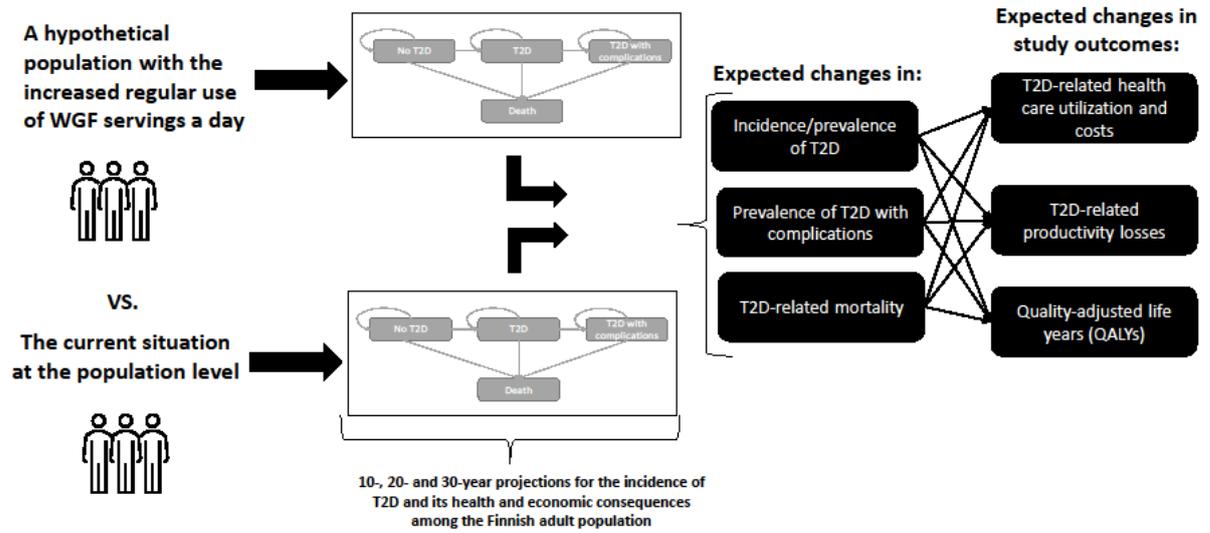


Figure S1 Graphical scheme of the study design

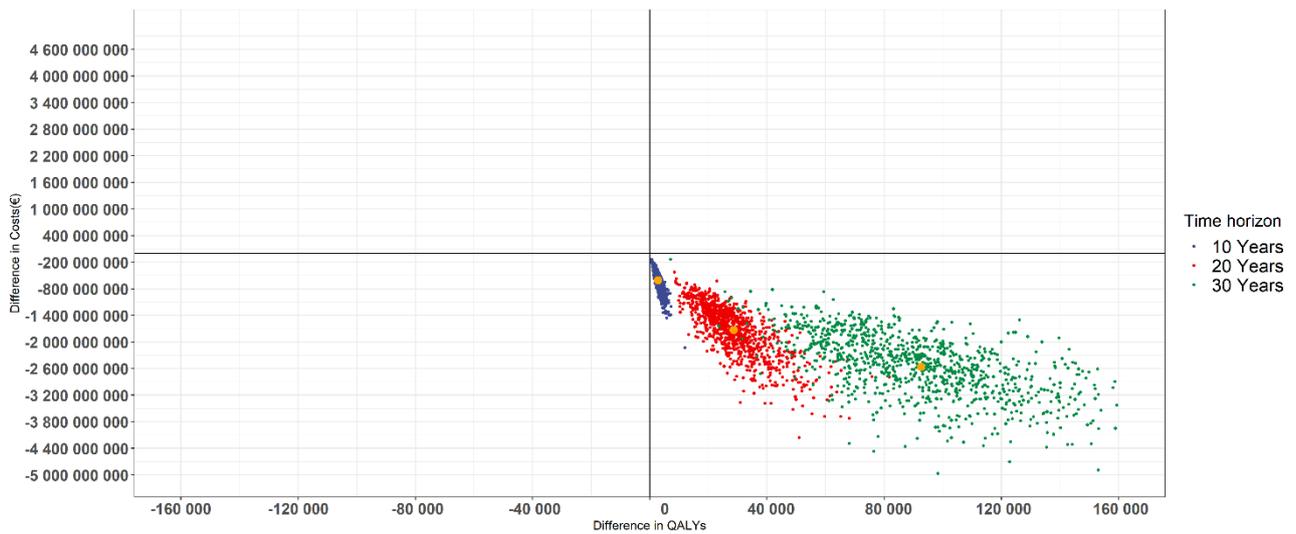


Figure S2A Results of the probabilistic sensitivity analysis showing the impact of applied time horizon on the distribution of expected population-level cost savings and gained QALYs on the X-Y-plane using Scenario II (one or more additional whole grain servings a day among those who already use at least one whole grain serving a day) as an example. Blue, red, and green color stands for 10-year, 20-year, and 30-year time horizon, respectively.

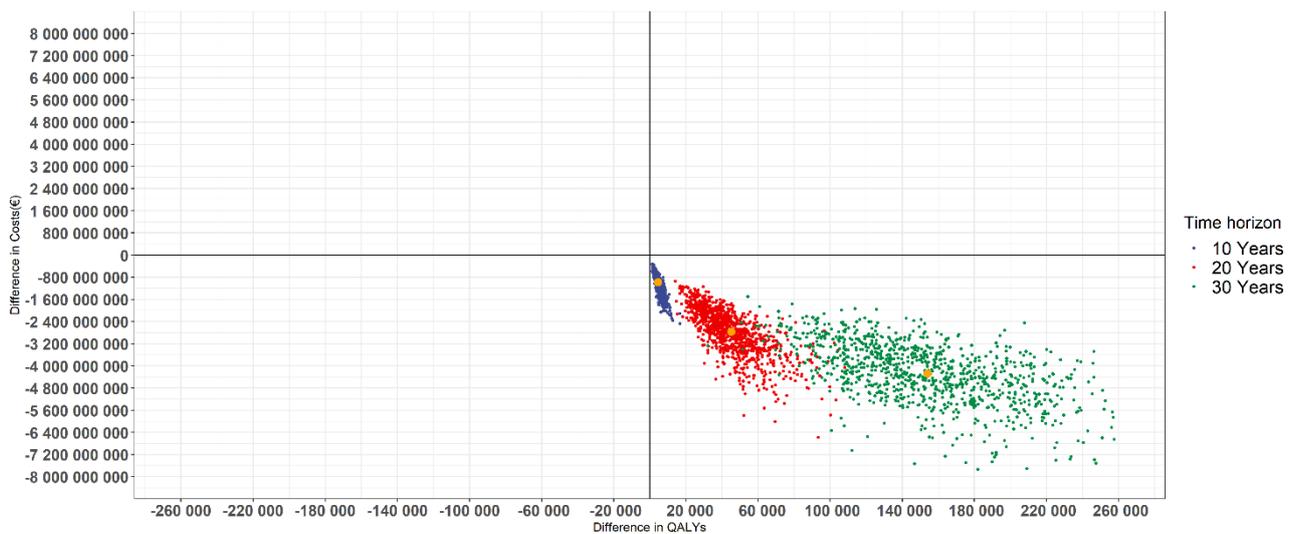


Figure S2B Results of the probabilistic sensitivity analysis showing the impact of applied time horizon on the distribution of expected population-level cost savings and gained QALYs on the X-Y-plane using Scenario III (the combination of Scenarios I and II) as an example. Blue, red, and green color stands for 10-year, 20-year, and 30-year time horizon, respectively.

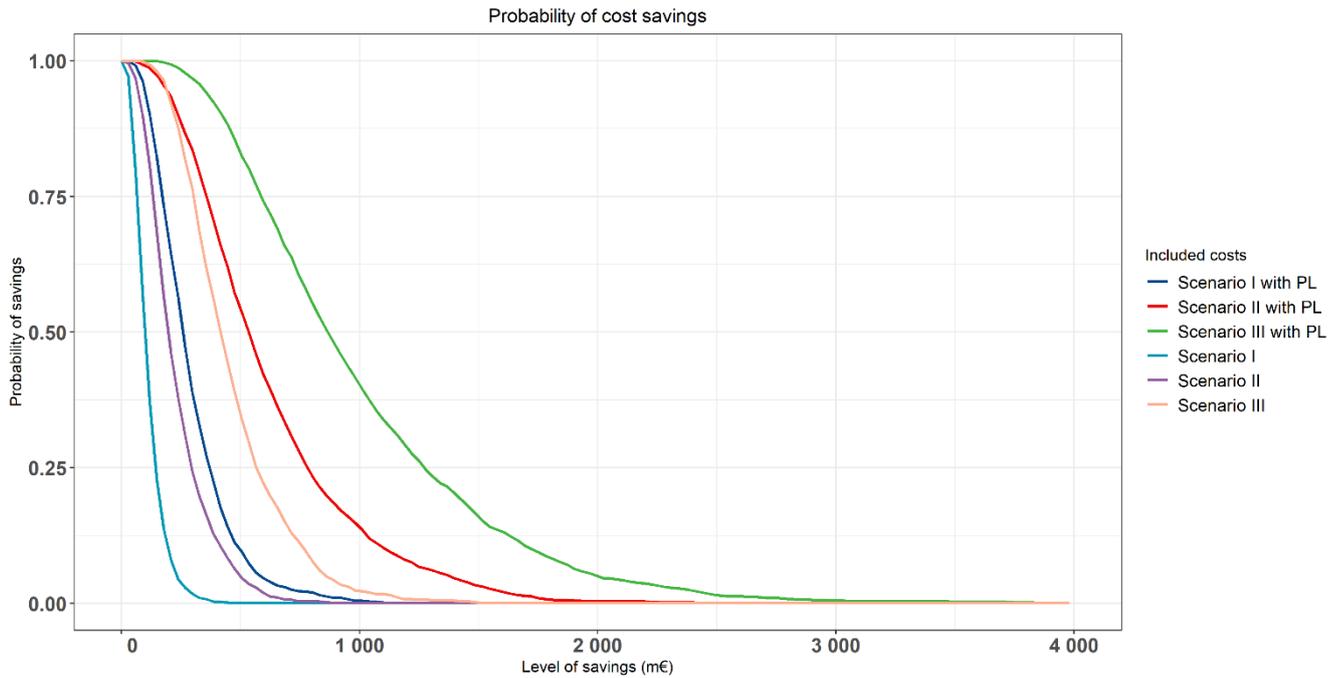


Figure S3A Probability of cumulative savings (with and without T2D-related productivity losses) in the modelled scenarios when applying the 10-year time horizon (2017 as a baseline year). Scenario I: a 10%-unit increase in the Finnish population using at least one whole grain food serving a day, Scenario II: one or more additional whole grain servings a day among those who already use at least one whole grain serving a day, and Scenario III: the combination of Scenarios I and II. In all scenarios, the current situation was applied as a comparator. PL= productivity losses due to T2D.

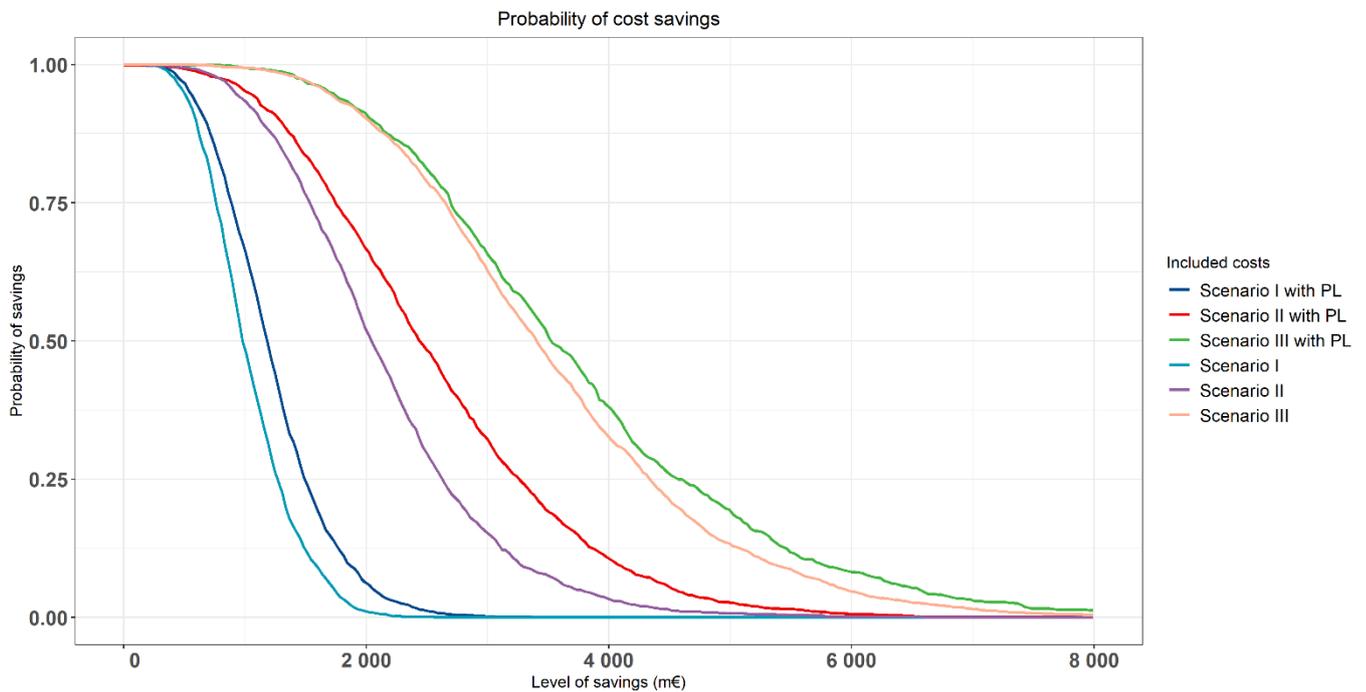


Figure S3B Probability of cumulative savings (with and without T2D-related productivity losses) in the modelled scenarios when applying the 30-year time horizon (2017 as a baseline year). Scenario I: a 10%-unit increase in the Finnish population using at least one whole grain food serving a day, Scenario II: one or more additional whole grain servings a day among those who already use at least one whole grain serving a day, and Scenario III: the combination of Scenarios I and II. In all scenarios, the current situation was applied as a comparator. PL= productivity losses due to T2D.

Table S1: The FINDRISC score distribution in the general population [23].

Gender	Age	FINDRISC	FINDRISC	FINDRISC	FINDRISC	FINDRISC
		0–6	7–11	12–14	15–19	20–26
Men	30 to 39	0.738	0.214	0.048	0.00	0.00
Men	40 to 49	0.545	0.330	0.098	0.028	0.00
Men	50 to 59	0.288	0.412	0.178	0.104	0.017
Men	60 to 69	0.195	0.470	0.177	0.135	0.022
Men	70 to 79	0.193	0.484	0.155	0.143	0.025
Women	30 to 39	0.687	0.216	0.073	0.022	0.001
Women	40 to 49	0.506	0.352	0.093	0.045	0.005
Women	50 to 59	0.266	0.425	0.185	0.105	0.019
Women	60 to 69	0.163	0.444	0.237	0.126	0.003
Women	70 to 79	0.130	0.379	0.228	0.224	0.039

Table S2: Coefficients of the Weibull regression for incidence of T2D.

Parameter (95 % CI)	Value (variation)	p-value	Distribution	Distribution values used in PSA Mean (SE)
Gamma	2.329 (2.101 to 2.582)	<0.001	Normal	2.329 (0.122)
Sex Coefficient	-0.256 (-0.370 to -0.150)	<0.001	Normal	-0.256 (0.256)
Age Coefficient	-0.002 (-0.091 to 0.005)	0.532	Normal	-0.002 (0.0016)
Constant	4.668 (4.158 to 5.185)	<0.001	Normal	4.668 (1.199)
FINDRISC 0-6	0.000 (0.000 to 0.000)	Reference	Normal	0.000 (0.000)
FINDRISC 7-11	-0.486 (-0.779 to -0.192)	<0.001	Normal	-0.486 (0.691)
FINDRISC 12-14	-0.908 (-1.200 to -0.615)	<0.001	Normal	-0.908 (0.687)
FINDRISC 15-19	-1.284 (-1.569 to -0.998)	<0.001	Normal	-1.284 (0.672)
FINDRISC 20+	-1.658 (-1.964 to -1.351)	<0.001	Normal	-1.658 (0.719)

The FINDRISC score groups (0-6, 7-11, 12-14, 15-19 and 20-26) are beta coefficients of the regression model.

Table S3: The complications considered to be T2D-related in the Weibull regression model.

Complication	ICD-10
Eye complications	
Retinopathy or other diabetic eye complication,	E11.3, H28.0, H36 (excluding H36.8), H40.5, H42.0, H43.1, H45.0,
Renal complications	
Renal insufficiency	E11.2, N08.3, N18
End-stage renal disease (with or without dialysis)	Z49, Z94.0
Neuropathic complications	
Amputation of lower extremities	NOMESCO: NFQ10, NFQ20, NGQ10, NGQ20, NHQ10, NHQ20, NFQ48, NGQ48, NHQ30, NHQ40, NHQ60
Diabetic neuropathy, Charcot foot or other diabetic foot complication	E11.4, E11.5, E11.6, G59.0, G63.2, G73.0, G99.0, I70.2, I73.9, I79.2, L97, M14.2, M14.6, N48.4
Cardiovascular complications	
Angina pectoris	I20.0
Chronic heart failure	I11.0, I13.0, I13.2, I50
Incident myocardial infarction/cardiac arrest	I21, I46
Other ischemic heart disease	I22–I25
Cerebrovascular complications	
Ischemic stroke	I63–I66 (excluding I63.6)

Table S4: Weibull regression coefficients for the incidence of T2D-related complications.

Parameter (95 % CI)	Value (variation)	p-value	Distribution applied in PSA	Distribution values used in PSA Mean (SE)
Gamma	0.857 (0.778 to 0.944)	<0.001	Normal	0.857 (0.084)
Age coefficient	-0.062 (-0.075 to -0.049)	<0.001	Normal	-0.062 (0.063)
Sex coefficient	-0.760 (-1.355 to -0.485)	<0.001	Normal	-0.760 (0.444)
Constant	8.430 (7.290 to 9.570)	<0.001	Normal	8.430 (1.166)

PSA; Probabilistic Sensitivity Analysis

Table S5: Correlations between the Weibull regression coefficients.

Weibull regression coefficients, risk of T2D							
	FINDRISC 7-11	FINDRISC 12- 14	FINDRISC 15- 19	FINDRISC 20+	Age coefficient	Sex coefficient	Constant
FINDRISC 7-11	1						
FINDRISC 12-14	0.838	1					
FINDRISC 15-19	0.837	0.885	1				
FINDRISC 20+	0.763	0.829	0.873	1			
Age coefficient	-0.017	-0.033	-0.039	-0.047	1		
Sex coefficient	0.042	0.058	0.125	0.213	-0.011	1	
Constant	-0.476	-0.527	-0.566	-0.562	-0.752	-0.21	1

Weibull regression coefficients, risk of T2D complications			
	Age coefficient	Sex coefficient	Constant
Age coefficient	1		
Sex coefficient	0.284	1	
Constant	-0.911	-0.630	1