

**Table S1.** Exclusion criteria applied to diabetes type-2 outpatients and healthy subjects

	<b>EXCLUSION CRITERIA</b>
<b>Type 2 diabetes outpatients</b>	<ol style="list-style-type: none"><li>1. a medical diagnosis of type-1 diabetes, current chronic illness other than type-2 diabetes</li><li>2. current psychiatric disorders as evaluated via the Mini International Neuropsychiatric Interview [S1]</li><li>3. cognitive deficits as assessed via the Mini Mental State Examination [S2]</li><li>4. mother tongue other than Italian</li></ol>
<b>Healthy subjects</b>	<ol style="list-style-type: none"><li>1. diagnosis of type-2, type-1 diabetes, or current chronic medical illness</li><li>2. current psychiatric disorders as evaluated via the Mini International Neuropsychiatric Interview [S1]</li><li>3. self-reported cognitive deficits</li><li>4. mother tongue other than Italian</li></ol>

**Table S2.** Standard procedure followed to translate and pilot-test the Euthymia Scale

Two independent Native Italian translators translated the Euthymia Scale from English into Italian; the two versions were then reviewed by a senior researcher to produce a single version; another bilingual expert back translated the scale and potential discrepancies were solved. A pilot-testing was run in 10 type-2 diabetes outpatients and in 10 healthy subjects

**Table S3.** Detailed description of the rating scales used

<p>The Euthymia Scale is a 10-item self-administered scale which covers the following clinical dimensions: lack of mood disturbances or, in case of a prior history of affective disorders, the subject is in full remission; refreshing/restorative sleep; the subject is cheerful, calm, active, interested in things; the subject displays psychological flexibility, resistance to stress, frustration tolerance. Each item is scored dichotomously (true/false) [1]</p>
<p>The WHO-5 is a 5-item self-administered scale assessing a generic state of subjective well-being. The WHO-5 showed good measurement properties [3]</p>
<p>The PWB is an 84-item self-reported questionnaire assessing eudaimonic psychological well-being (i.e., autonomy, environmental mastery, personal growth, purpose in life, interpersonal relationships, self-acceptance). The questionnaire has excellent internal consistency, good test-retest reliability [7]</p>
<p>The NEO-PI-3 is a 240-item self-reported questionnaire assessing the five basic personality traits of neuroticism, extraversion, openness to experience, agreeableness, conscientiousness. Internal consistency is excellent [8]</p>

**Table S4.** Hierarchical regression analyses examining the incremental validity of the Euthymia Scale on the PWB scales. Analyses were adjusted for sex, age, education, and past psychiatric illness

	Type-2 diabetes outpatients ( <i>n</i> = 100)			Healthy subjects ( <i>n</i> = 100)		
	$\Delta R^2$	$R^2$	$\beta$	$\Delta R^2$	$R^2$	$\beta$
<b>Criterion variable: PWB</b>	0.12***			0.02		
<b>Autonomy</b>						
Step 1: WHO-5		0.10	0.10***		0.03	-0.07
Step 2: Euthymia Scale		0.22	0.74***		0.05	0.33
<b>Criterion variable: PWB</b>	0.10***			0.04**		
<b>Environmental Mastery</b>						
Step 1: WHO-5		0.20	0.36***		0.07	0.22***
Step 2: Euthymia Scale		0.30	0.66***		0.11	0.49**
<b>Criterion variable: PWB</b>	0.00			0.04***		
<b>Personal Growth</b>						
Step 1: WHO-5		0.21	0.21**		0.10	-0.06***
Step 2: Euthymia Scale		0.21	0.16		0.14	0.41*
<b>Criterion variable: PWB</b>	0.13***			0.04		
<b>Purpose in life</b>						
Step 1: WHO-5		0.19	0.27***		0.08	0.22**
Step 2: Euthymia Scale		0.32	0.75***		0.12	0.38
<b>Criterion variable: PWB</b>	0.05***			0.00		
<b>Positive relations with others</b>						
Step 1: WHO-5		0.24	0.30***		0.06	0.16***
Step 2: Euthymia Scale		0.29	0.51		0.06	0.01

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<b>Criterion variable: PWB</b>	0.15***		0.09***	
<b>Self-Acceptance</b>				
Step 1: WHO-5	0.15	0.25**	0.08	0.16***
Step 2: Euthymia Scale	0.30	0.84***	0.17	0.68**

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PWB: Psychological Well-Being Scales; \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

**Table S5.** Hierarchical regression analyses examining the incremental validity of the Euthymia Scale on the NEO-PI-3 scales. Analyses were adjusted for sex, age, education, and past psychiatric illness

	Type-2 diabetes outpatients (n = 100)			Healthy subjects (n = 100)		
	$\Delta R^2$	R <sup>2</sup>	$\beta$	$\Delta R^2$	R <sup>2</sup>	$\beta$
<b>Criterion variable: NEO-</b>						
<b>PI-3 Neuroticism</b>	0.15***			0.13***		
Step 1: WHO-5		0.29	-0.43***	0.26		-0.25***
Step 2: Euthymia Scale		0.41	-0.74***	0.40		-0.83***
<b>Criterion variable: NEO-</b>						
<b>PI-3 Extraversion</b>	0.04***			0.01***		
Step 1: WHO-5		0.28	0.39***	0.15		0.26***
Step 2: Euthymia Scale		0.32	0.43***	0.16		0.16***
<b>Criterion variable: NEO-</b>						
<b>PI-3 Openness to experience</b>	0.00			0.01*		
Step 1: WHO-5		0.17	0.15	0.11		0.12
Step 2: Euthymia Scale		0.17	0.11	0.12		0.26
<b>Criterion variable: NEO-</b>						
<b>PI-3 Agreeableness</b>	0.01**			0.00		
Step 1: WHO-5		0.16	0.15	0.14		0.25*
Step 2: Euthymia Scale		0.17	0.19	0.14		0.01
<b>Criterion variable: NEO-</b>						
<b>PI-3 Conscientiousness</b>	0.02*			0.01		
Step 1: WHO-5		0.11	0.30**	0.02		0.07
Step 2: Euthymia Scale		0.13	0.34	0.03		0.23

NEO-PI 3: Neuroticism-Extraversion-Openness Personality Inventory 3; \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

**Table S6.** Concurrent validity between the Euthymia Scale and Psychological Well-Being Scales. Type-2 diabetes outpatients ( $n = 100$ ). Pearson correlations

	1	2	3	4	5	6	7
<b>1. Euthymia Scale</b>	-						
<b>2. PWB Autonomy</b>	0.20	-					
<b>3. PWB Environmental Mastery</b>	0.48**	0.54**	-				
<b>4. PWB Personal Growth</b>	0.24*	0.40**	0.56**	-			
<b>5. PWB Positive Relations with Others</b>	0.41**	0.34**	0.72**	0.61**	-		
<b>6. PWB Purpose in Life</b>	0.42**	0.47**	0.66**	0.58**	0.63**	-	
<b>7. PWB Self-Acceptance</b>	0.43**	0.48**	0.80**	0.63**	0.70**	0.74**	-

PWB: Psychological Well-Being Scales; \* $p < 0.05$ ; \*\* $p \leq 0.01$

$r < 0.30$  weak correlation;  $r$  from 0.30 to 0.50 moderate correlation;  $r > 0.50$  strong correlation [S3]

**Table S7.** Concurrent validity between the Euthymia Scale and Psychological Well-Being Scales. Healthy subjects ( $n = 100$ ). Pearson correlations

	1	2	3	4	5	6	7
<b>1. Euthymia Scale</b>	-						
<b>2. PWB Autonomy</b>	0.04	-					
<b>3. PWB Environmental Mastery</b>	0.30**	0.41**	-				
<b>4. PWB Personal Growth</b>	0.02	0.44**	0.53**	-			
<b>5. PWB Positive Relations with Others</b>	0.09	0.10	0.42**	0.35**	-		
<b>6. PWB Purpose in Life</b>	0.30**	0.21*	0.70**	0.52**	0.43**	-	
<b>7. PWB Self-Acceptance</b>	0.32**	0.37**	0.74**	0.45**	0.37**	0.61**	-

PWB: Psychological Well-Being Scales; \* $p < 0.05$ ; \*\* $p \leq 0.01$

$r < 0.30$  weak correlation;  $r$  from 0.30 to 0.50 moderate correlation;  $r > 0.50$  strong correlation [S3]



### **Supplementary references**

- S1. Sheehan DV, Lecrubier Y, Sheehan KH, Amorim P, Janavs J, Weiller E, Hergueta T, Baker R, Dunbar GC: The Mini-International Neuropsychiatric Interview (M.I.N.I.): The Development and Validation of a Structured Diagnostic Psychiatric Interview for DSM-IV and ICD-10. *J Clin Psychiatry* 1998;59:22-33.
- S2. Folstein MF, Robins LN, Helzer JE: The Mini-Mental State Examination. *Arch Gen Psychiatry* 1983;40:812.
- S3. Cohen J: A power primer. *Psychol Bull* 1992;112:155–159.