Supplementary material: Transfer of Working Memory Training to Reading Comprehension

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Participants - Additional demographic information

Demographic sample split by nationality **Table S 1** and formal years of education **Table S 2**.

Table S 1 Demographic sample split by nationality

	YOUNG		OLD	
NATIONALITY	n	%	n	%
EUROPE				
Austria	0	0.0	1	1.1
Greece	5	6.0	0	0.0
Hungary	2	2.4	0	0.0
Ireland	0	0.0	1	1.1
Italy	8	9.6	0	0.0
Netherlands	1	1.2	0	0.0
Poland	6	7.2	0	0.0
Portugal	12	14.5	0	0.0
Romania	2	2.4	0	0.0
Slovenia	1	1.2	0	0.0
Spain	3	3.6	1	1.1
United Kingdom	8	9.6	69	75.0
ASIA				
Indonesia	1	1.2	0	0.0
Israel	2	2.4	1	1.1
Malaysia	1	1.2	0	0.0
Pakistan	1	1.2	0	0.0
AMERICA				
Canada	0	0.0	1	1.1
Mexico	7	8.4	0	0.0
United States	8	9.6	16	17.4
AFRICA				
Nigeria	1	1.2	0	0.0
Lebanon	1	1.2	0	0.0
South Africa	12	14.5	1	1.1
Zimbabwe	1	1.2	0	0.0
NA	0	0.0	1	1.1

Table S 2 Demographic sample split by education level.

EDUCATION	YOUNG	OLD
Doctorate degree (PhD/other)	0	5
Graduate degree (MA/MSc/MPhil/other)	19	15
High school diploma/A-levels	21	19
Primary education	0	1
Secondary education (e.g. GED/GCSE)	2	18
Technical/community college	6	7
Undergraduate degree (BA/BSc/other)	35	27

Materials

The ***delayed match-to-sample task (DMTS)*** used stimuli consisting of colored and light gray dots presented on a dark gray background. Different shades of colors were used for the relevant (targets) and irrelevant hemifield (distracters). To equate the perceived difficulty of the task between different age cohorts, different memory loads for the two age groups were selected (Sander et al., 2011) based on results obtained in previous studies (Tagliabue et al., 2019, 2020). In each trial either 3, 4 or 5 (for younger adults) or 2, 3 or 4 (for older adults) colored dots were presented on each side of the screen together with gray dots. To equate the sensory information presented on both hemifields, the total number of stimuli presented on the screen was kept constant throughout the experiment (24 items in total: 12 items for each hemifield, comprising colored + gray dots). The items were positioned using an invisible 8 (rows) by 10 (columns) (10° height x 16° width) grid centered at the center of the screen, where a black fixation cross was present for the entire trial procedure. Dots never appeared in the columns closest to the fixation cross. Before starting the experiment, participants were asked to sit in front of the monitor at arm length distance (approximately 70 cm) and to complete a procedure that, by estimating the actual dimension of their screen (Card Task procedure; see, Li et al., 2020 and https://gitlab.pavlovia.org/Wake/screenscale), would ensure stimulus size to be relatively stable across participants.

Each trial began with a 1-second inter-stimulus interval, followed by a black arrow cue above the fixation cross for 500 ms, indicating the relevant hemifield. After 1 second, the memory array was displayed for 300 ms, followed by a 1200 ms retention interval. Participants memorized the colors of the stimuli in the cued hemifield. In 50% of trials, the test array matched the memory array (no change); in the other 50%, one target changed color (change condition). The test array remained until the participant responded or for 3 seconds. Participants pressed the right arrow key for "same" and the left arrow key for "different." The experiment had 216 trials in 6 blocks of 36 trials each, with two practice blocks of 8 trials each. The temporal sequence presentation of a typical DMTS trial is shown in Figure S 1.

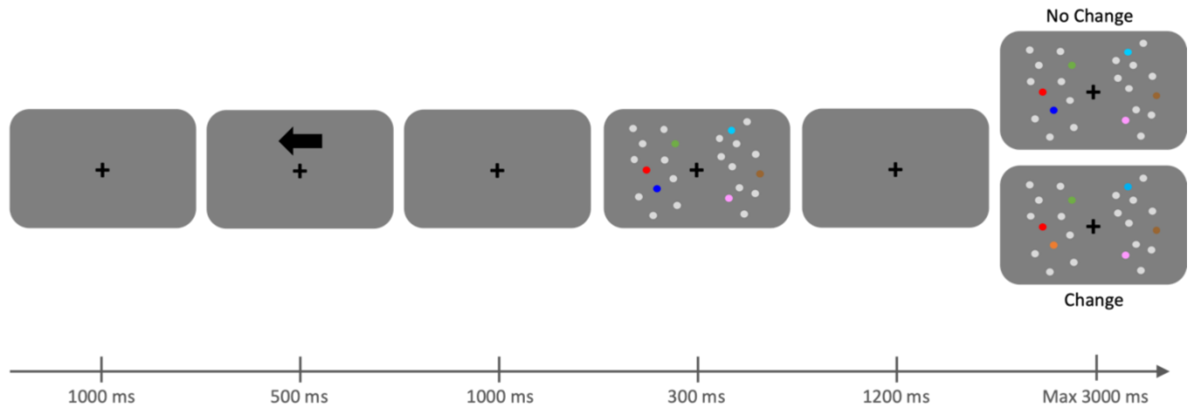

Figure S 1 Temporal sequence presentation of a typical DMTS trial.

The ***n-back task (NB)*** shows a stream of stimuli (Verhaeghen & Basak, 2005): a square (white) moves around 8 positions on a grid (central position is reserved for fixation) on a gray background (128,128,128). The grid is a square of 0.6 x 0.6 height of the screen and it is visible throughout the block. The size of the moving square is 0.1 height. Participants make a judgment on the position of the square. If the square is in the same position as 'n' squares before, they press the left arrow ('SAME'), if it is in a different position they press the right arrow ('CHANGE'). Each square is present on the screen for 300 ms then a fixation for 1700 ms. Each sequence has 20+n trials. Each sequence had 6 'match' and 14 'nomatch' (plus n primes). For 'n' > 1, 2 of the nomatch trials were also 'lures'. Participants have a chance to practice (N =1, N=2, 20+N trials each, with feedback after every trial) before the actual experiment while practicing they receive feedback on responses. During the task, they only receive feedback at the end of each block, in the form of % correct. Young participants take N = 2,3,4; Old participants take N = 1,2,3. The session included 6 for each 'n'. It takes about 20 min to complete all the levels. The temporal sequence presentation of a typical n-back is shown in Figure S 2.

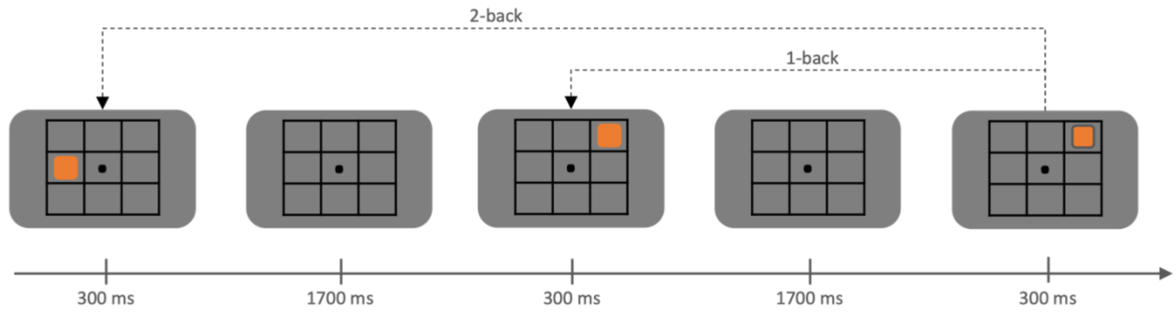

Figure S 2 Temporal sequence presentation of a typical n-back.

The ***reading comprehension task (RC)*** was designed following (Daneman & Carpenter, 1980; Martin et al., 2020). In the reading comprehension task, participants were asked to read a paragraph (~140 words). 36 paragraphs were selected from test for English reading comprehension. Paragraphs were selected based on their content, in such a way that topics of general knowledge that could have facilitated the answers, were not considered. Both paragraphs and questions were proofread by a native English speaker. After reading the paragraph, participants were presented with four questions: two general questions about the meaning of the paragraph (answers: YES / NO / I DON'T KNOW) and two questions on facts reported in the paragraph (3 choices). Participants have no limits on the time to read the paragraphs or to respond. Paragraphs and questions following a paragraph were presented in random order. Once questions were presented, the paragraph was no longer available to participants. Each session includes 10 paragraphs (e.g. 20 *fact-based* questions and 20 *true/false* questions). Feedback on accuracy is not provided.

Stimuli were piloted on a small group of 10 young adults: in addition to the task, piloting participants were also asked to rate (on a Likert scale from 1 to 5) the difficulty of the questions for a given paragraph. This information was used in two ways. First, we ensure that no paragraph was perceived as exceptionally easy or exceptionally difficult. Second, we used this rating to aid the selection of stimuli for randomization. Because of the constraints of the testing platform, we could not, at the same time, fully randomize stimuli across participants and ensure that each participant would not receive the same stimulus twice across sessions. We therefore order stimuli according to the reported average difficulty, then split them into four groups (very easy, easy, difficult, very difficult, 9 paragraphs each). Each session had 3 paragraphs from each of the very easy and the very difficult group and 2 from each of the easy and difficult group and they were different from each other, giving a total of 10 paragraphs for each session. Six different versions of the experiment across sessions were created (one for each randomization of the tasks at baseline). All stimuli are available here https://osf.io/a3r6g/.

Data analysis

Analysis was performed using R (R Core Team, 2020), with the following packages (and dependencies): "nlme" for model fitting (Pinheiro et al., 2020), "emmeans" for post-hoc comparisons (Russell Lenth, 2020), "sjplot" for model diagnostics and reporting (Lüdecke, 2020), "here" for path definition (Müller K, 2020, https://here.r-lib.org/index.html), "tidyverse" (Wickham et al., 2019).

Results

Age-related effects on performance at baseline

Memory performance. Table S3 shows the output of the linear models shown below predicting working memory indexes (Kst, Kup, and EMQ) by age and other individual differences. Dependent variabls are also shown in Figure S3 for young and older adults.

dv = Kst | K |up Everyday memory
dv ~ Age Group + Education

Table S3 Outcome of linear models for memory indexes. Significant model coefficients at an alpha = 0.05 are marked in bold.

Differences between young and old at baseline

	storage WM capacity - Kst			process WM capacity - Kup			everyday memory		
Coeffcient	*Estimates*	*CI(95%)*	*P-Value*	*Estimates*	*CI(95%)*	*P-Value*	*Estimates*	*CI(95%)*	*P-Value*
(Intercept)	1.81	1.69 – 1.93	**<0.001**	1.05	0.94 – 1.15	**<0.001**	30.23	24.43 – 36.02	**<0.001**
age group [Young]	0.57	0.40 – 0.75	**<0.001**	0.16	0.01 – 0.31	**0.037**	21.28	12.83 – 29.73	**<0.001**
Education	0.02	-0.01 – 0.05	0.199	0.02	-0.01 – 0.04	0.154	-0.27	-1.66 – 1.12	0.702
Observations	175			175			175		
R^2 / R^2 adjusted	0.209 / 0.200			0.041 / 0.030			0.126 / 0.116		

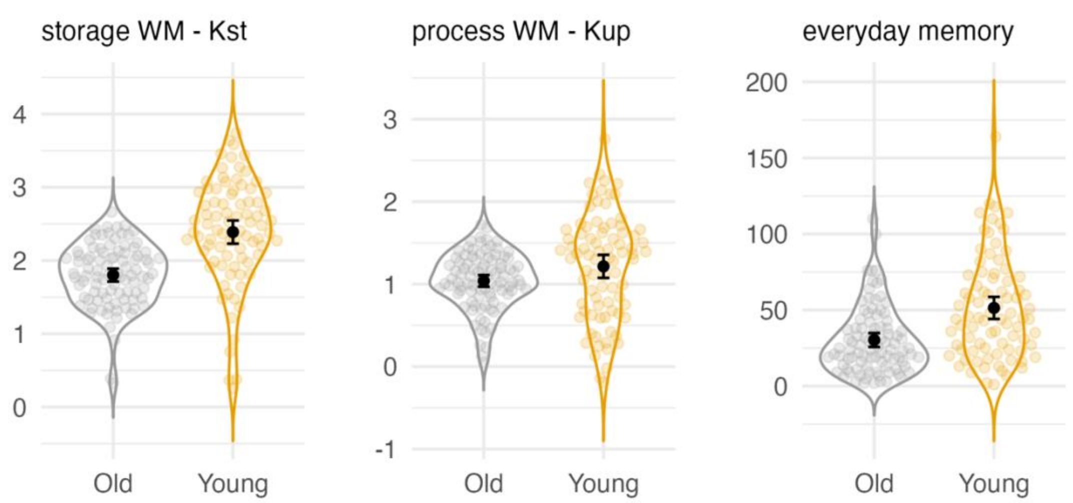

Figure S 3 Qualitative comparison of storage and process capacity distributions for young and older adults

Reading performance To compare memory performance in young and older adults, we fitted a linear mixed model **Table S4** to predict reading comprehension performance with age group, condition (storage, process), and their interaction, education, and reading speed. A qualitative comparison of reading performance distributions for young and older adults, fact-based and true/false questions, is depicted in Figure S 4 Qualitative comparison of reading performance distributions for young and older adults, fact-based and true/false questions.

dv = performance in reading comprehension task
dv ~ Age * condition + Education + Reading speed

Table S4 Output of a linear mixed model predicting performance in the reading comprehension task, with variables pertaining to individual differences, age, and condition. Significant model coefficients at an alpha = 0.05 are marked in bold.

	Age-related differences in reading accuracy		
Coeffcient	*Estimates*	*CI(95%)*	*P-Value*
(Intercept)	0.93	0.92 – 0.95	**<0.001**
age group [Young]	-0.01	-0.04 – 0.01	0.350
Condition [true/false]	-0.11	-0.13 – -0.08	**<0.001**
Education	0.00	-0.00 – 0.00	0.248
Reading speed	0.14	0.07 – 0.20	**<0.001**
age group [Young] × Condition [true/false]	0.01	-0.03 – 0.04	0.615
Observations	350		
R^2 / R^2 adjusted	0.309 / 0.299		

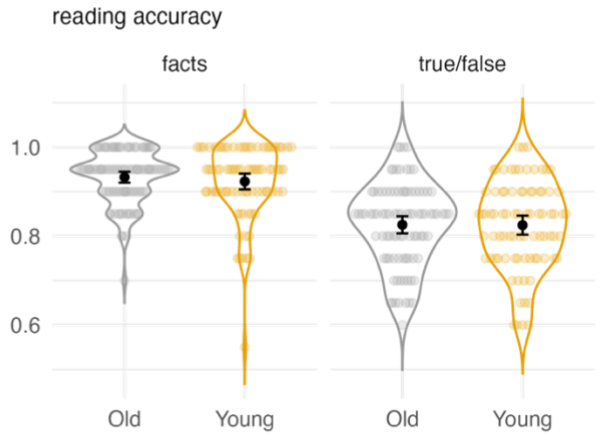

Figure S 4 Qualitative comparison of reading performance distributions for young and older adults, fact-based and true/false questions.

Training-related changes in performance

Memory performance

We analyzed the changes in working memory storage (Kst, Table S 5) and process (Kup, Table S 6) capacity as a function of training type, age, and other individual differences. The model for Kup also included Kst at baseline as a covariate. ‘Session’ was not included as random slope.

Kst ~ Session * Training + Education + (1|sID)
Kup ~ Session * Training + Kst + Education + (1|sID)

Table S 5 Model output of changing in working memory storage capacity Kst after training. Significant model coefficients at an alpha = 0.05 are marked in bold.

Training-Related Changes in Kst by AgeGroups

	Young			Old		
Coeffcient	*Estimates*	*CI(95%)*	*P-Value*	*Estimates*	*CI(95%)*	*P-Value*
(Intercept)	2.57	2.17 – 2.98	**<0.001**	1.75	1.52 – 1.98	**<0.001**
SessionNum	-0.04	-0.26 – 0.18	0.716	0.17	0.05 – 0.30	**0.008**
Training [DMTS]	-0.48	-1.09 – 0.14	0.127	-0.43	-0.77 – -0.10	**0.011**
Training [NBACK]	-0.55	-1.17 – 0.07	0.082	-0.16	-0.47 – 0.16	0.328
Education	0.01	-0.05 – 0.07	0.739	-0.00	-0.02 – 0.02	0.938
SessionNum × Training [DMTS]	0.39	0.05 – 0.72	**0.025**	0.21	0.03 – 0.40	**0.022**
SessionNum × Training [NBACK]	0.15	-0.19 – 0.48	0.393	0.02	-0.16 – 0.19	0.854
Random Effects						
σ^2	0.21			0.06		
τ_{00}	0.35 $_{\text{PID}}$			0.10 $_{\text{PID}}$		
ICC	0.63			0.61		
N	83 $_{\text{PID}}$			92 $_{\text{PID}}$		
Observations	166			184		
Marginal R^2 / Conditional R^2	0.074 / 0.658			0.115 / 0.654		

Table S 6 Model output of changing in working memory updating capacity Kup after training. Significant model coefficients at an alpha = 0.05 are marked in bold

Training-Related Changes in Kup by AgeGroups

	Young			Old		
Coeffcient	*Estimates*	*CI(95%)*	*P-Value*	*Estimates*	*CI(95%)*	*P-Value*
(Intercept)	0.38	-0.24 – 1.00	0.227	0.64	0.29 – 0.99	**<0.001**
SessionNum	0.09	-0.08 – 0.26	0.309	0.12	0.02 – 0.22	**0.014**
Training [DMTS]	0.04	-0.48 – 0.56	0.874	0.06	-0.21 – 0.32	0.661
Training [NBACK]	-0.39	-0.93 – 0.14	0.147	-0.25	-0.50 – 0.01	0.056
Kst bas	0.30	0.10 – 0.50	**0.004**	0.17	0.02 – 0.33	**0.027**
Education	-0.00	-0.06 – 0.06	0.985	0.01	-0.00 – 0.03	0.132
SessionNum × Training [DMTS]	0.02	-0.24 – 0.28	0.869	-0.05	-0.19 – 0.09	0.510
SessionNum × Training [NBACK]	0.42	0.16 – 0.69	**0.002**	0.16	0.03 – 0.29	**0.016**
Random Effects						
σ^2	0.13			0.04		
τ_{00}	0.36 $_{PID}$			0.08 $_{PID}$		
ICC	0.74			0.69		
N	83 $_{PID}$			92 $_{PID}$		
Observations	166			184		
Marginal R^2 / Conditional R^2	0.124 / 0.772			0.136 / 0.730		

Reading comprehension performance

We analyzed the changes in reading comprehension performance as a function of training type, age, baseline working memory capacity (Kst_bas and Kup_bas), and other individual differences, see Table S 7. Participants were included as random factors. Random slopes for Sessions were not included as that would result in a non-positive definite approximate variance-covariance: individuals vary but all at the same rate.

```
dv =    storage acc young | process acc young |
        storage acc old | process acc old

dv ~    Session * Training + Kst_bas + Kup_bas +
        Education + Reading speed + (1|sID)
```

Table S 7 Output of a linear mixed model predicting performance in the reading comprehension task, with variables pertaining to individual differences, age, and condition. Significant model coefficients at an alpha = 0.05 are marked in bold.

Training-related changes in reading accuracy

	facts - young			true/false - young			facts - old			true/false - old		
Coeffcient	*Estimates*	*CI(95%)*	*P-Value*	*Estimates*	*CI(95%)*	*P-Value*	*Estimates*	*CI(95%)*	*P-Value*	*Estimates*	*CI(95%)*	*P-Value*
(Intercept)	0.92	0.85 – 0.99	**<0.001**	0.77	0.68 – 0.87	**<0.001**	0.91	0.85 – 0.97	**<0.001**	0.82	0.71 – 0.93	**<0.001**
SessionNum	0.01	-0.03 – 0.04	0.756	0.02	-0.02 – 0.06	0.307	0.01	-0.01 – 0.04	0.246	0.05	0.00 – 0.09	**0.043**
TrainingdmtsvsPassive	0.04	-0.04 – 0.12	0.368	-0.01	-0.11 – 0.09	0.846	0.02	-0.04 – 0.08	0.487	-0.04	-0.14 – 0.06	0.422
TrainingnbackvsPassive	-0.06	-0.14 – 0.02	0.126	-0.01	-0.12 – 0.10	0.848	0.01	-0.04 – 0.07	0.663	0.05	-0.05 – 0.15	0.314
Kst bas	0.00	-0.01 – 0.02	0.628	0.01	-0.02 – 0.04	0.506	0.01	-0.01 – 0.03	0.410	-0.02	-0.06 – 0.02	0.373
Kup bas	0.00	-0.02 – 0.03	0.696	0.02	-0.01 – 0.05	0.226	-0.01	-0.04 – 0.02	0.386	-0.01	-0.06 – 0.04	0.803
Education	-0.00	-0.01 – 0.00	0.206	-0.01	-0.01 – 0.00	0.110	0.00	0.00 – 0.01	**0.010**	-0.00	-0.01 – 0.00	0.783
Reading speed	0.16	0.08 – 0.24	**<0.001**	0.08	-0.04 – 0.19	0.176	0.09	0.02 – 0.16	**0.010**	0.10	-0.01 – 0.22	0.086
SessionNum × TrainingdmtsvsPassive	-0.05	-0.09 – 0.00	0.067	-0.00	-0.07 – 0.06	0.913	-0.01	-0.04 – 0.02	0.548	0.01	-0.05 – 0.08	0.661
SessionNum × TrainingnbackvsPassive	0.01	-0.03 – 0.06	0.578	-0.02	-0.09 – 0.04	0.465	-0.01	-0.04 – 0.02	0.606	-0.03	-0.09 – 0.03	0.283
Random Effects												
σ^2	0.00			0.01			0.00			0.01		
τ_{00}	0.00_{PID}			0.00_{PID}			0.00_{PID}			0.00_{PID}		
ICC	0.25			0.35			0.32			0.24		
N	83_{PID}			83_{PID}			92_{PID}			92_{PID}		
Observations	166			166			184			184		
Marginal R^2 / Conditional R^2	0.143 / 0.354			0.075 / 0.396			0.094 / 0.384			0.078 / 0.295		

Relation between reading comprehension and working memory capacity

Do different age groups rely on distinct resources to achieve their performance levels?

We model reading comprehension storage and process performance for each age group as a function of memory capacity at baseline and other individual differences. Coefficients are reported in Table S 8 while associated Bayes factors are in Table S 9.

dv = storage acc young | process acc young | storage acc old | process acc old
dv ~ Kst + Kup + Education + EMQ + Reading speed

Table S 8 Output of a generalized linear model predicting performance in the reading comprehension task, with variables pertaining to individual differences, age, and baseline working memory storage and process capacity. Significant model coefficients at an alpha = 0.05 are marked in bold.

Impact of working memory capacity on reading accuracy

	facts - young			true/false - young			facts - old			true/false - old		
Coeffcient	*Estimates*	*CI(95%)*	*P-Value*	*Estimates*	*CI(95%)*	*P-Value*	*Estimates*	*CI(95%)*	*P-Value*	*Estimates*	*CI(95%)*	*P-Value*
(Intercept)	0.91	0.85 – 0.98	**<0.001**	0.74	0.66 – 0.82	**<0.001**	0.93	0.87 – 0.98	**<0.001**	0.81	0.72 – 0.91	**<0.001**
Kst	0.00	-0.02 – 0.03	0.885	0.03	-0.00 – 0.06	0.075	0.02	-0.01 – 0.05	0.186	0.01	-0.04 – 0.06	0.680
Kup	-0.01	-0.04 – 0.02	0.631	0.01	-0.02 – 0.05	0.405	-0.04	-0.08 – -0.01	**0.017**	-0.01	-0.07 – 0.05	0.821
Education	0.00	-0.01 – 0.01	0.763	-0.01	-0.02 – 0.00	0.102	0.00	0.00 – 0.01	**0.014**	0.00	-0.00 – 0.01	0.292
EMQ	0.00	-0.00 – 0.00	0.350	0.00	-0.00 – 0.00	0.734	0.00	0.00 – 0.00	**0.022**	0.00	-0.00 – 0.00	0.921
Reading speed	0.16	0.03 – 0.29	**0.014**	0.15	-0.01 – 0.30	0.063	0.14	0.04 – 0.23	**0.008**	0.10	-0.06 – 0.27	0.222
Observations	83			83			92			92		
R^2 / R^2 adjusted	0.099 / 0.040			0.136 / 0.080			0.186 / 0.138			0.029 / -0.028		

Table S 9 Bayes factors in favour of the null of reading perfomrance at baseline (M0: ACC ~ Education + EMQ + Reading_speed)

Age group	Condition	Model	BFm	BF01	BF10	error %
YOUNG	FACTS	M0	0.85	1.00	1.00	0.00
		M0 + Kst	0.33	**2.54**	0.39	0.01
		M0 + Kup	0.37	**2.32**	0.43	0.01
	TRUE / FALSE	M0	0.35	1.00	1.00	0.00
		M0 + Kst	1.07	0.33	**3.05**	0.01
		M0 + Kup	0.38	0.94	1.07	0.01
OLD	FACTS	M0	3.81	1.00	1.00	0.00
		M0 + Kst	1.68	**2.26**	0.44	0.01
		M0 + Kup	9.52	0.40	**2.50**	0.00
	TRUE / FALSE	M0	0.07	1.00	1.00	0.01
		M0 + Kst	0.03	**2.25**	0.45	0.00
		M0 + Kup	0.03	**2.36**	0.42	0.00

Can reading comprehension performance be improved by working memory training?

We model changes in reading comprehension storage and process performance for each age group as a function changes in memory capacity after training (ΔKst, ΔKup), and other individual differences. Coefficients are reported in **Table S10** while associated Bayes factors are in **Table S 11.**

dv = delta storage acc young | process acc young | storage acc old | process acc old
dv ~ ΔKst + ΔKup + Education + Reading speed

Table S10 Linear mixed model predictions of reading comprehension performance in young and older adults as a function of changes in working memory capacity, distinguishing between storage and processing demands. Significant model coefficients at an alpha = 0.05 are marked in bold.

Reading comprehension accuracy in young and older adults as a function of changes in working memory capacity, distinguishing between facts and processing demands.

	facts - young			true/false - young			facts - old			true/false - old		
Coeffcient	*Estimates*	*CI(95%)*	*P-Value*	*Estimates*	*CI(95%)*	*P-Value*	*Estimates*	*CI(95%)*	*P-Value*	*Estimates*	*CI(95%)*	*P-Value*
(Intercept)	-0.02	-0.04 – 0.01	0.142	0.01	-0.02 – 0.03	0.731	0.01	-0.01 – 0.03	0.150	0.03	-0.01 – 0.06	0.098
dKst	0.02	-0.01 – 0.06	0.190	0.05	0.01 – 0.09	**0.013**	-0.00	-0.04 – 0.04	0.945	0.04	-0.03 – 0.11	0.299
dKup	0.04	-0.01 – 0.08	0.086	-0.02	-0.07 – 0.03	0.442	-0.03	-0.08 – 0.02	0.186	-0.02	-0.11 – 0.07	0.629
Education	-0.00	-0.01 – 0.01	0.844	0.01	-0.00 – 0.02	0.242	0.00	-0.00 – 0.00	0.850	-0.01	-0.01 – 0.00	0.095
Reading speed	0.07	-0.07 – 0.21	0.333	-0.10	-0.27 – 0.07	0.242	0.04	-0.06 – 0.14	0.409	0.11	-0.06 – 0.28	0.209
Observations	83			83			92			92		
R^2 / R^2 adjusted	0.109 / 0.063			0.098 / 0.052			0.032 / -0.013			0.077 / 0.034		

Table S 11 Bayes factors in favour of the null of changes in reading performance after training (M0: ACC ~ Education + Reading_speed)

Age group	Condition	Model	BFm	BF01	BF10	error %
Young	facts	M0	0.29	1.00	1.00	0.007
		M0+ dKst	0.38	0.76	1.32	0.000
		M0+ dKup	0.53	0.56	1.80	0.007
	true/false	M0	0.17	1.00	1.00	0.011
		M0+ dKst	0.71	0.23	**4.30**	0.001
		M0+ dKup	0.36	0.46	2.18	0.007
Old	facts	M0	0.11	1.00	1.00	0.006
		M0+ dKst	0.04	**2.60**	0.39	0.012
		M0+ dKup	0.04	**2.98**	0.34	0.002
	true/false	M0	0.78	1.00	1.00	0.003
		M0+ dKst	0.47	1.67	0.60	0.001
		M0+ dKup	0.20	**3.86**	0.26	0.008

Collinearity check

Table S 12 reports VIFs for all covariates, showing no evidence of problematic collinearity. VIFs were reported only for continuous covariates (e.g., education, reading speed, EMQ, baseline working memory). (*) Indicates that the model is restricted to fact-based or inferential condition"

Age-related effects at baseline

Model(s)	Predictors tested	Variance Inflation Factor
Kst ~ age_group + Education	Education	1.02
Kup ~ age_group + Education	Education	1.02
EMQ ~ age_group + Education	Education	1.02
%Corr model	Education	1.03
	Reading speed	1.02

Training-related changes in performance

Model(s)	Predictors tested	Variance Inflation Factor	
		Young	Old
Kst ~ SessionNum * Training + Education + (1 | PID)	Education	1.08	1.00
Kup ~ SessionNum * Training + Kst_bas + Education + (1 | PID)	Kst_bas	1.07	1.05
	Education	1.08	1.01
%Corr ~ SessionNum * Training + Kst_bas + Kup_bas + Education + Reading_speed + (1 | PID)*	Kst_bas	1.23	1.13
	Kup_bas	1.19	1.12
	Education	1.09	1.04
	Reading speed	1.11	1.03

Relation between reading comprehension and working memory

Model(s)	Predictors tested	Variance Inflation Factor	
		Young	Old
%Corr ~ SessionNum * Training + Kst_bas + Kup_bas + Education + Reading_speed + (1 | PID)*	Kst_bas	1.16	1.09
	Kup_bas	1.19	1.16
	Education	1.03	1.05
	EMQ	1.08	1.09
	Reading speed	1.07	1.07
Δ%Corr ~ ΔKst + ΔKup + Education + Reading speed*	ΔKst	1.13	1.10
	ΔKup	1.18	1.04
	Education	1.10	1.06
	Reading speed	1.11	1.03

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