Supplemental Figure 2. Forest plot of residual (coupling) associations between pulmonary functioning and cognition

		, ,
<b>Estimate Characteristics</b>		<u>R (95% CI)</u>
Mental Status		
EAS Men: BIMC & PEF	<del>-= </del> -	-0.05, (-0.17, 0.07)
EAS Women: BIMC & PEF	- <b>+</b> -	-0.01, (-0.11, 0.09)
OCTO Men: Clock & PEF	<del></del>	0.08, (-0.14, 0.29)
OCTO Women: Clock & PEF	<u> </u>	0.16, (0.02, 0.29)
OCTO Men: MMSE & PEF	<del></del>	0.17, (-0.09, 0.4)
OCTO Women: MMSE & PEF	l —	0.23, (0.1, 0.36)
MAP Men: Ideas & FEV1	<b>-</b>	0.04, (-0.04, 0.12)
MAP Women: Ideas & FEV1	<b>±</b>	0.03, (-0.02, 0.08)
MAP Men: MMSE & FEV1	<b>+</b>	0.02, (-0.06, 0.1)
MAP Women: MMSE & FEV1	<b>=</b> -	0.07, (0.01, 0.13)
NAS Men: MMSE & FEV1	<b>.</b>	-0.02, (-0.08, 0.04)
SATSA Men: MMSE & FEV1	<b></b>	0.05, (-0.05, 0.15)
SATSA Women: MMSE & FEV1	_ <b>=</b> _	0.14, (0.04, 0.24)
Male Average, I2=0%	<b>♦</b>	0.01, (-0.03, 0.05)
F 1 4 10 (2.10)		0.00 (0.01 0.10)
Female Average, I2=63.1%	<b>├</b>	0.09, (-0.01, 0.18)
Overall Average, I2=0.2%	<b>&gt;</b>	0.02, (-0.01, 0.04)
Processing Speed		
EAS Men: Digit Symbol & PEF		-0.13, (-0.26, 0.01)
EAS Women: Digit Symbol & PEF	<u> </u>	0.02, (-0.08, 0.12)
LASA Men: Coding & PEF	T_	0.13, (0.07, 0.19)
LASA Women: Coding & PEF		0.11, (0.05, 0.17)
OCTO Men: Perceptual Speed & PEF	<u></u>	-0.03, (-0.23, 0.18)
OCTO Women: Perceptual Speed & PEF		0.03, (-0.14, 0.21)
OCTO Men: Symbol & PEF	<u> </u>	-0.02, (-0.15, 0.11)
OCTO Women: Symbol & PEF	T	0.03, (-0.07, 0.13)
MAP Men: Number Comparison & FEV1	Ţ	0.03, (-0.05, 0.11)
MAP Women: Number Comparison & FEV1	I	0.01, (-0.04, 0.06)
MAP Men: Symbol & FEV1	<b>T_</b>	0.08, (0, 0.16)
MAP Women: Symbol & FEV1		0.05, (0, 0.10)
SATSA Men: Symbol & FEV1	<u>F</u>	0.01, (-0.11, 0.13)
SATSA Women: Symbol & FEV1	T	0.04, (-0.06, 0.14)
SATSA Women. Symbol & PEVT	<del> </del>	0.04, (-0.00, 0.14)
Male Average, I2=63.6%	<b>♦</b>	0.03, (-0.03, 0.09)
Female Average, I2=6.9%	<b>*</b>	0.05, (0, 0.1)
Overall Average, I2=0.1%	<b>&gt;</b>	0.01, (0, 0.02)

Attention & Working Memory	0.07 (0.05 0.10)
EAS Men: Digit Span Total & PEF	0.07, (-0.05, 0.19)
EAS Women: Digit Span Total & PEF	-0.03, (-0.13, 0.07)
EAS Men: Trails B & PEF	0, (-0.14, 0.14)
EAS Women: Trails B & PEF	-0.02, (-0.12, 0.08)
HRS Men: Serial 7s & PEF	0.03, (-0.03, 0.09)
HRS Women: Serial 7s & PEF	-0.02, (-0.06, 0.02)
OCTO Men: Digit Span Backward & PEF	0.08, (-0.02, 0.18)
OCTO Women: Digit Span Backward & PEF	0.05, (-0.05, 0.15)
OCTO Men: DigitSpan Forward & PEF	0.05, (-0.05, 0.14)
OCTO Women: DigitSpan Forward & PEF	-0.03, (-0.11, 0.05)
MAP Men: Digit Span Backward & FEV1	-0.01, (-0.09, 0.07)
MAP Women: Digit Span Backward & FEV1	-0.02, (-0.07, 0.03)
MAP Men: DigitSpan Forward & FEV1	0.04, (-0.02, 0.1)
MAP Women: DigitSpan Forward & FEV1	-0.04, (-0.15, 0.08)
MAP Men: Digit Ordering & FEV1	0, (-0.09, 0.09)
MAP Women: Digit Ordering & FEV1	0.07, (0.02, 0.12)
NAS Men: Digit Span Backward - Total & FEV1	-0.06, (-0.2, 0.09)
NAS Men: Digit Span Backward - Total & TEVT	0.03, (-0.02, 0.08)
<del>-</del> -	· · · · · · · · · · · · · · · · · · ·
SATSA Men: Digit Span Backward & FEV1	-0.03, (-0.13, 0.07)
SATSA Women: Digit Span Backward & FEV1	-0.01, (-0.08, 0.07)
SATSA Men: DigitSpan Forward & FEV1	0.11, (0.03, 0.19)
SATSA Women: DigitSpan Forward & FEV1	0.03, (-0.03, 0.09)
Male Average, I2=0%	0.01, (-0.01, 0.04)
Female Average, I2=53.6%	0.02, (-0.01, 0.06)
Overall Average, I2=0%	0, (0, 0)
Perceptual Reasoning	
EAS Men: Block Design & PEF	-0.11, (-0.24, 0.03)
EAS Women: Block Design & PEF	
	-0.01, (-0.11, 0.09)
LASA Men: Progressive Matrices & PEF	
LASA Men: Progressive Matrices & PEF LASA Women: Progressive Matrices & PEF	0.05, (-0.01, 0.11)
LASA Women: Progressive Matrices & PEF	0.05, (-0.01, 0.11) 0, (-0.06, 0.06)
LASA Women: Progressive Matrices & PEF OCTO Men: Block Design & PEF	0.05, (-0.01, 0.11) 0, (-0.06, 0.06) 
LASA Women: Progressive Matrices & PEF OCTO Men: Block Design & PEF OCTO Women: Block Design & PEF	0.05, (-0.01, 0.11) 0, (-0.06, 0.06) 0.14, (0.02, 0.25) 0.17, (0.06, 0.26)
LASA Women: Progressive Matrices & PEF OCTO Men: Block Design & PEF OCTO Women: Block Design & PEF OCTO Men: Figure Reasoning & PEF	0.05, (-0.01, 0.11) 0, (-0.06, 0.06) 0.14, (0.02, 0.25) 0.17, (0.06, 0.26) -0.06, (-0.2, 0.09)
LASA Women: Progressive Matrices & PEF OCTO Men: Block Design & PEF OCTO Women: Block Design & PEF OCTO Men: Figure Reasoning & PEF OCTO Women: Figure Reasoning & PEF	0.05, (-0.01, 0.11) 0, (-0.06, 0.06) 0.14, (0.02, 0.25) 0.17, (0.06, 0.26) -0.06, (-0.2, 0.09) 0.07, (-0.04, 0.17)
LASA Women: Progressive Matrices & PEF OCTO Men: Block Design & PEF OCTO Women: Block Design & PEF OCTO Men: Figure Reasoning & PEF OCTO Women: Figure Reasoning & PEF SATSA Men: Block Design & FEV1	0.05, (-0.01, 0.11) 0, (-0.06, 0.06) 0.14, (0.02, 0.25) 0.17, (0.06, 0.26) -0.06, (-0.2, 0.09) 0.07, (-0.04, 0.17) 0.01, (-0.09, 0.11)
LASA Women: Progressive Matrices & PEF OCTO Men: Block Design & PEF OCTO Women: Block Design & PEF OCTO Men: Figure Reasoning & PEF OCTO Women: Figure Reasoning & PEF SATSA Men: Block Design & FEV1 SATSA Women: Block Design & FEV1	0.05, (-0.01, 0.11) 0, (-0.06, 0.06) 0.14, (0.02, 0.25) 0.17, (0.06, 0.26) -0.06, (-0.2, 0.09) 0.07, (-0.04, 0.17) 0.01, (-0.09, 0.11) 0.07, (-0.01, 0.15)
LASA Women: Progressive Matrices & PEF OCTO Men: Block Design & PEF OCTO Women: Block Design & PEF OCTO Men: Figure Reasoning & PEF OCTO Women: Figure Reasoning & PEF SATSA Men: Block Design & FEV1 SATSA Women: Block Design & FEV1 NAS Men: Figure Copy & FEV1	0.05, (-0.01, 0.11) 0, (-0.06, 0.06) 0.14, (0.02, 0.25) 0.17, (0.06, 0.26) -0.06, (-0.2, 0.09) 0.07, (-0.04, 0.17) 0.01, (-0.09, 0.11) 0.07, (-0.01, 0.15) -0.09, (-0.15, -0.03)
LASA Women: Progressive Matrices & PEF OCTO Men: Block Design & PEF OCTO Women: Block Design & PEF OCTO Men: Figure Reasoning & PEF OCTO Women: Figure Reasoning & PEF SATSA Men: Block Design & FEV1 SATSA Women: Block Design & FEV1 NAS Men: Figure Copy & FEV1 NAS Men: Pattern Completion & FEV1	0.05, (-0.01, 0.11) 0, (-0.06, 0.06) 0.14, (0.02, 0.25) 0.17, (0.06, 0.26) -0.06, (-0.2, 0.09) 0.07, (-0.04, 0.17) 0.01, (-0.09, 0.11) 0.07, (-0.01, 0.15) -0.09, (-0.15, -0.03) 0.03, (-0.03, 0.09)
LASA Women: Progressive Matrices & PEF OCTO Men: Block Design & PEF OCTO Women: Block Design & PEF OCTO Men: Figure Reasoning & PEF OCTO Women: Figure Reasoning & PEF SATSA Men: Block Design & FEV1 SATSA Women: Block Design & FEV1 NAS Men: Figure Copy & FEV1 NAS Men: Pattern Completion & FEV1 MAP Men: Line Orientation & FEV1	0.05, (-0.01, 0.11) 0, (-0.06, 0.06) 0.14, (0.02, 0.25) 0.17, (0.06, 0.26) -0.06, (-0.2, 0.09) 0.07, (-0.04, 0.17) 0.01, (-0.09, 0.11) 0.07, (-0.01, 0.15) -0.09, (-0.15, -0.03) 0.03, (-0.03, 0.09) -0.02, (-0.1, 0.06)
LASA Women: Progressive Matrices & PEF OCTO Men: Block Design & PEF OCTO Women: Block Design & PEF OCTO Men: Figure Reasoning & PEF OCTO Women: Figure Reasoning & PEF SATSA Men: Block Design & FEV1 SATSA Women: Block Design & FEV1 NAS Men: Figure Copy & FEV1 NAS Men: Pattern Completion & FEV1 MAP Men: Line Orientation & FEV1 MAP Women: Line Orientation & FEV1	0.05, (-0.01, 0.11) 0, (-0.06, 0.06) 0.14, (0.02, 0.25) 0.17, (0.06, 0.26) -0.06, (-0.2, 0.09) 0.07, (-0.04, 0.17) 0.01, (-0.09, 0.11) 0.07, (-0.01, 0.15) -0.09, (-0.15, -0.03) 0.03, (-0.03, 0.09) -0.02, (-0.1, 0.06) -0.04, (-0.08, 0)
LASA Women: Progressive Matrices & PEF OCTO Men: Block Design & PEF OCTO Women: Block Design & PEF OCTO Men: Figure Reasoning & PEF OCTO Women: Figure Reasoning & PEF SATSA Men: Block Design & FEV1 SATSA Women: Block Design & FEV1 NAS Men: Figure Copy & FEV1 NAS Men: Pattern Completion & FEV1 MAP Men: Line Orientation & FEV1 MAP Women: Line Orientation & FEV1 MAP Men: Progressive Matrices & FEV1	0.05, (-0.01, 0.11) 0, (-0.06, 0.06) 0.14, (0.02, 0.25) 0.17, (0.06, 0.26) -0.06, (-0.2, 0.09) 0.07, (-0.04, 0.17) 0.01, (-0.09, 0.11) 0.07, (-0.01, 0.15) -0.09, (-0.15, -0.03) 0.03, (-0.03, 0.09) -0.02, (-0.1, 0.06) -0.04, (-0.08, 0) -0.03, (-0.1, 0.05)
LASA Women: Progressive Matrices & PEF OCTO Men: Block Design & PEF OCTO Women: Block Design & PEF OCTO Men: Figure Reasoning & PEF OCTO Women: Figure Reasoning & PEF SATSA Men: Block Design & FEV1 SATSA Women: Block Design & FEV1 NAS Men: Figure Copy & FEV1 NAS Men: Pattern Completion & FEV1 MAP Men: Line Orientation & FEV1 MAP Women: Line Orientation & FEV1 MAP Women: Progressive Matrices & FEV1 MAP Women: Progressive Matrices & FEV1 MAP Women: Progressive Matrices & FEV1	0.05, (-0.01, 0.11) 0, (-0.06, 0.06) 0.14, (0.02, 0.25) 0.17, (0.06, 0.26) -0.06, (-0.2, 0.09) 0.07, (-0.04, 0.17) 0.01, (-0.09, 0.11) 0.07, (-0.01, 0.15) -0.09, (-0.15, -0.03) 0.03, (-0.03, 0.09) -0.02, (-0.1, 0.06) -0.04, (-0.08, 0) -0.03, (-0.07, 0.01)
LASA Women: Progressive Matrices & PEF OCTO Men: Block Design & PEF OCTO Women: Block Design & PEF OCTO Men: Figure Reasoning & PEF OCTO Women: Figure Reasoning & PEF SATSA Men: Block Design & FEV1 SATSA Women: Block Design & FEV1 NAS Men: Figure Copy & FEV1 NAS Men: Pattern Completion & FEV1 MAP Men: Line Orientation & FEV1 MAP Women: Line Orientation & FEV1 MAP Women: Progressive Matrices & FEV1 MAP Women: Progressive Matrices & FEV1 SATSA Men: Card Rotations & FEV1 SATSA Men: Card Rotations & FEV1	0.05, (-0.01, 0.11) 0, (-0.06, 0.06) 0.14, (0.02, 0.25) 0.17, (0.06, 0.26) -0.06, (-0.2, 0.09) 0.07, (-0.04, 0.17) 0.01, (-0.09, 0.11) 0.07, (-0.01, 0.15) -0.09, (-0.15, -0.03) 0.03, (-0.03, 0.09) -0.02, (-0.1, 0.06) -0.04, (-0.08, 0) -0.03, (-0.07, 0.01) 0.02, (-0.08, 0.12)
LASA Women: Progressive Matrices & PEF OCTO Men: Block Design & PEF OCTO Women: Block Design & PEF OCTO Men: Figure Reasoning & PEF OCTO Women: Figure Reasoning & PEF SATSA Men: Block Design & FEV1 SATSA Women: Block Design & FEV1 NAS Men: Figure Copy & FEV1 NAS Men: Pattern Completion & FEV1 MAP Men: Line Orientation & FEV1 MAP Women: Line Orientation & FEV1 MAP Women: Progressive Matrices & FEV1 MAP Women: Progressive Matrices & FEV1	0.05, (-0.01, 0.11) 0, (-0.06, 0.06) 0.14, (0.02, 0.25) 0.17, (0.06, 0.26) -0.06, (-0.2, 0.09) 0.07, (-0.04, 0.17) 0.01, (-0.09, 0.11) 0.07, (-0.01, 0.15) -0.09, (-0.15, -0.03) 0.03, (-0.03, 0.09) -0.02, (-0.1, 0.06) -0.04, (-0.08, 0) -0.03, (-0.07, 0.01)
LASA Women: Progressive Matrices & PEF OCTO Men: Block Design & PEF OCTO Women: Block Design & PEF OCTO Men: Figure Reasoning & PEF OCTO Women: Figure Reasoning & PEF SATSA Men: Block Design & FEV1 SATSA Women: Block Design & FEV1 NAS Men: Figure Copy & FEV1 NAS Men: Pattern Completion & FEV1 MAP Men: Line Orientation & FEV1 MAP Women: Line Orientation & FEV1 MAP Women: Progressive Matrices & FEV1 MAP Women: Progressive Matrices & FEV1 SATSA Men: Card Rotations & FEV1 SATSA Men: Card Rotations & FEV1	0.05, (-0.01, 0.11) 0, (-0.06, 0.06) 0.14, (0.02, 0.25) 0.17, (0.06, 0.26) -0.06, (-0.2, 0.09) 0.07, (-0.04, 0.17) 0.01, (-0.09, 0.11) 0.07, (-0.01, 0.15) -0.09, (-0.15, -0.03) 0.03, (-0.03, 0.09) -0.02, (-0.1, 0.06) -0.04, (-0.08, 0) -0.03, (-0.07, 0.01) 0.02, (-0.08, 0.12)
LASA Women: Progressive Matrices & PEF OCTO Men: Block Design & PEF OCTO Women: Block Design & PEF OCTO Men: Figure Reasoning & PEF OCTO Women: Figure Reasoning & PEF SATSA Men: Block Design & FEV1 SATSA Women: Block Design & FEV1 NAS Men: Figure Copy & FEV1 NAS Men: Pattern Completion & FEV1 MAP Men: Line Orientation & FEV1 MAP Women: Line Orientation & FEV1 MAP Women: Progressive Matrices & FEV1 SATSA Men: Progressive Matrices & FEV1 SATSA Men: Card Rotations & FEV1 SATSA Women: Card Rotations & FEV1	0.05, (-0.01, 0.11) 0, (-0.06, 0.06) 0.14, (0.02, 0.25) 0.17, (0.06, 0.26) -0.06, (-0.2, 0.09) 0.07, (-0.04, 0.17) 0.01, (-0.09, 0.11) 0.07, (-0.01, 0.15) -0.09, (-0.15, -0.03) 0.03, (-0.03, 0.09) -0.02, (-0.1, 0.06) -0.04, (-0.08, 0) -0.03, (-0.1, 0.05) -0.03, (-0.07, 0.01) 0.02, (-0.08, 0.12) 0.01, (-0.07, 0.09)
LASA Women: Progressive Matrices & PEF OCTO Men: Block Design & PEF OCTO Women: Block Design & PEF OCTO Men: Figure Reasoning & PEF OCTO Women: Figure Reasoning & PEF OCTO Women: Figure Reasoning & PEF SATSA Men: Block Design & FEV1 SATSA Women: Block Design & FEV1 NAS Men: Figure Copy & FEV1 NAS Men: Pattern Completion & FEV1 MAP Men: Line Orientation & FEV1 MAP Women: Line Orientation & FEV1 MAP Women: Progressive Matrices & FEV1 MAP Women: Progressive Matrices & FEV1 SATSA Men: Card Rotations & FEV1 SATSA Women: Card Rotations & FEV1 Male Average, I2=59.8%	0.05, (-0.01, 0.11) 0, (-0.06, 0.06) 0.14, (0.02, 0.25) 0.17, (0.06, 0.26) -0.06, (-0.2, 0.09) 0.07, (-0.04, 0.17) 0.01, (-0.09, 0.11) 0.07, (-0.01, 0.15) -0.09, (-0.15, -0.03) 0.03, (-0.03, 0.09) -0.02, (-0.1, 0.06) -0.04, (-0.08, 0) -0.03, (-0.1, 0.05) -0.03, (-0.07, 0.01) 0.02, (-0.08, 0.12) 0.01, (-0.07, 0.09)

## Verbal Abilities

EAS Men: Boston Naming Test & PEF EAS Women: Boston Naming Test & PEF

EAS Men: Categories & PEF EAS Women: Categories & PEF

EAS Men: FAS & PEF
EAS Women: FAS & PEF
EAS Women: FAS & PEF
EAS Women: Vocabulary & PEF
EAS Women: Vocabulary & PEF
OCTO Men: Information & PEF
OCTO Women: Information & PEF
OCTO Men: Synonyms & PEF
OCTO Women: Synonyms & PEF
MAP Men: Boston Naming Test & FEV1

MAP Women: Boston Naming Test & FEV1
MAP Men: Categories & FEV1
MAP Women: Categories & FEV1
MAP Men: NART & FEV1

MAP Women: NART & FEV1
NAS Men: Animals & FEV1
SATSA Men: Analogies & FEV1
SATSA Women: Analogies & FEV1
SATSA Men: Information & FEV1
SATSA Women: Information & FEV1
SATSA Men: Synonyms & FEV1
SATSA Women: Synonyms & FEV1

Male Average, I2=89.2%

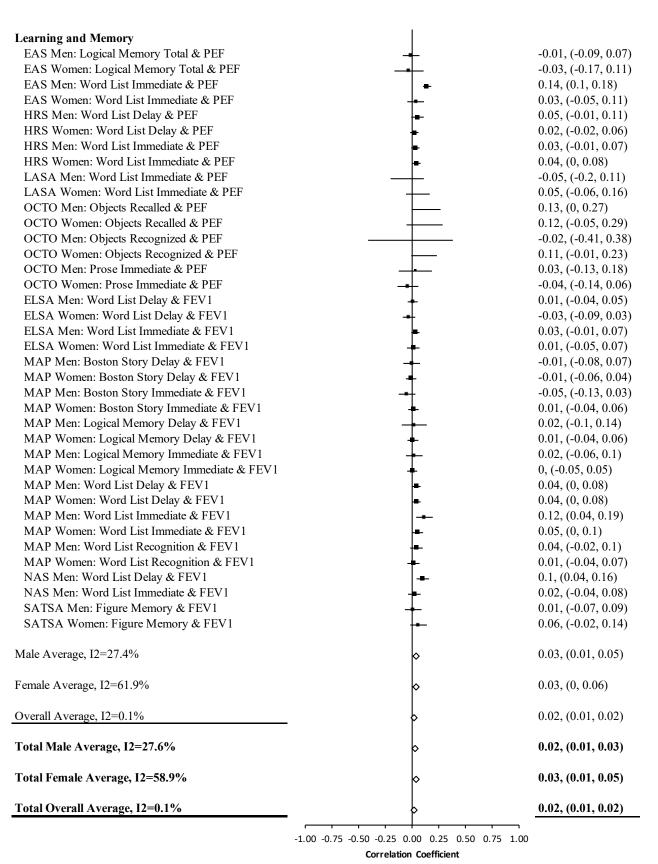
Female Average, I2=42.7%

Overall Average, I2=0%



0.05, (-0.07, 0.17) -0.06, (-0.16, 0.04) 0.02, (-0.1, 0.14)-0.09, (-0.21, 0.03) 0.02, (-0.12, 0.16) 0.02, (-0.08, 0.12)-0.02, (-0.16, 0.12) -0.04, (-0.14, 0.06) 0.07, (-0.07, 0.2) 0.03, (-0.07, 0.13)0.05, (-0.13, 0.22)-0.07, (-0.17, 0.03) 0.01, (-0.09, 0.11)0.02, (-0.04, 0.08)0.03, (-0.05, 0.11)-0.02, (-0.07, 0.03)-0.03, (-0.11, 0.04) 0.02, (-0.04, 0.08)0.03, (-0.03, 0.09)0.06, (-0.04, 0.16) 0.02, (-0.06, 0.1)0.11, (0.01, 0.21)0.11, (0.03, 0.19)0.04, (-0.06, 0.14)0.08, (0, 0.16)0.03, (0.01, 0.06)0.01, (-0.02, 0.03)

0, (0, 0)



**Note:** Estimates were calculated using random-effects meta-analysis. \*Due to high levels of heterogeneity in the estimate attributable solely to the inclusion of OCTO coupled with its relatively old age in relation to other studies, results from analyses of OCTO-Twin data were given weights equal to zero in meta-analyses.