ONLINE SUPPLEMENTARY MATERIAL

Table S1.

*Items in the Utilized Subscales of Temperament Measure*

|  |  |
| --- | --- |
| Activity | moves about a lot (kicks, grabs, squirms) during nappy change and dressing |
|  | moves a lot (squirms, bounces, kicks) while lying awake in his cot |
|  | plays actively with his parents - much movement of arms, legs, body |
|  | moves about much during feeding (squirms, kicks, grabs) |
|  | shows much bodily movement (kicks, waves, arms) when given an injection |
|  | actively grasps or touches objects within his reach (hair,spoon, glasses, etc) |
|  | moves much and for several minutes or more when playing by himself (kicking, waving arms and bouncing) |
|  | *sits still while watching TV or other nearby activity (such as children playing)* |
|  | *lies quietly in the bath* |
|  | *lies still when asleep and wakes up in the same position* |
|  | *lies still and moves little while playing with toys* |
|  | *lies still during procedures like hair brushing or nail cutting* |
| Approach | is shy (turns away or clings to you) on meeting another child for the first time |
|  | For the first few minutes in a new place or situation (new shop or home) he is fretful |
|  | initial reaction is withdrawal (turns head, spits out) when consistency, flavor or temperature of solid foods is changed |
|  | appears bothered (cries, squirms) when first put down in a different sleeping place |
|  | first reaction to any new procedure (first haircut, new medicine, etc) is objection |
|  | *accepts straight away a change in place or position of feeding or person doing it* |
|  | *accepts new foods straight away, swallowing them promptly* |
|  | *At home his initial reaction to strangers is acceptance* |
|  | *accepts within a few minutes a change in place of bath or person giving it* |
|  | *initial reaction to seeing doctor is acceptance (smiles, coos)* |
| Adaptability | resists changes in feeding schedule (1 hour or more) even after 2 tries |
|  | objects to being bathed in a different place or by a different person even after 2 or 3 tries |
|  | continues to react to a loud noise (hammering,barking dog, etc) heard several |
|  | still wary or frightened of strangers after 15 mins |
|  | requires introduction of a new food on 3 or more occasions before he will accept (swallow) it |
|  | *accepts nail cutting without protest* |
|  | *accepts his bath any time of the day without resisting it* |
|  | *accepts regular procedures (hair brushing, face washing, etc) at any time* |
|  | *adjusts within 10 mins to new surroundings (home, shop, play area)* |
|  | *accepts changes in solid foods (type, amount, timing) within 1 or 2 tries* |
| Intensity | vigorously resists additional food or milk when full (spits out, clamps mouth closed, pushes spoon away etc) |
|  | reacts strongly to foods, whether positively (smacks lips, laughs, squeals) or negatively (cries) |
|  | greets a new toy with a loud voice and much expression of feeling (whether positive or negative) |
|  | displays much feeling (vigorous laughing or crying) during nappy change or dressing |
|  | reacts strongly to strangers: laughing or crying |
|  | *takes feeding quietly with mild expressions of likes and dislikes* |
|  | *reacts mildly (just blinks or is startled briefly) to a bright light (e.g. sunlight let in by drawing back curtain)* |
|  | *reacts mildly to meeting familiar people (quiet smiles or no response)* |
|  | *plays quietly and calmly with toys (little vocal or other noises)* |
|  | *is calm in the bath. Like or dislike is mildly expressed (smiles or frowns)* |
| Mood | is fussy on waking up and going to sleep |
|  | cries when left to play alone |
|  | is fussy or cries during a physical examination by a doctor |
|  | *makes happy sounds (coos, laughs) when having his nappy changed, or being dressed* |
|  | *is pleasant (smiles, laughs) when first arriving in unfamiliar places (friend's house, shop)* |
|  | *is pleasant (coos, smiles, etc) during procedures like hair brushing or face washing* |
|  | *is content (smiles, coos) during interruptions of milk or solid feeding* |
|  | *cries for less than 1minute when given an injection* |
|  | *remains pleasant or calm with minor injuries (bumps, pinches)* |

*Notes.* Italicized items have been reverse coded.

Table S2.

*Sensitivity Analysis for Testing Alternative Models for Total Behavior Problem in Early Adolescence (Temperament Retained as a Continuous Variable)*.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Standard parameterization | | | Re-parameterized regression equation | | | | |
|  | Differential susceptibility | | Diathesis-Stress | |
|  | Parenting and temperament main effects: Model 1 | Effects and interaction of parenting and temperament: Model 2 |  |  |  |  |  |
| Parameter | Parameter | Weak: Model 3a | Strong: Model 3b | Weak: Model 3c | Strong: Model 3d |
| *B0* | 6.25(0.37)\*\*\* | 6.25(0.37)\*\*\* | *B0* | 6.06(0.06)\*\*\* | 6.06(0.06)\*\*\* | 3.59(0.31)\*\*\* | 4.35(0.21)\*\*\* |
| *B1* | -0.64(0.07)\*\*\* | -.28(0.34) | *B1* | -0.28(0.34) | 0.00 (-)b | -0.66(0.11)\*\*\* | 0.00 (-)b |
| *B2* | -0.00(0.00) | 0.00(0.00) | *B3* | -0.00(0.00) | -0.01(0.00)\*\*\* | 0.00(0.00) | -0.01(0.00)\*\*\* |
| *B3* | - | -.0.00(0.00) | *C* | 0.00 (-)b | 0.00 (-)b | 4.95 (-)b | 4.95 (-)b |
| *R2* | .014 | .014 | *R2* | .026 | .026 | 0.026 | .021 |
| *F vs.* 1 |  | 1.07 | *F vs.*3a |  | 4.65 | - | 86.70 |
| *df* |  | 1, 94.72 | *df* |  | 1, 14538 | - | 1, 14538 |
| *p* |  | 0.30 | *p* |  | .03 | - | <.0001 |
| AIC | 51573.26 | 51572.43 | AIC | 105060.25 | 105075.44 | 105137.16 | 105135.16 |
| BIC | 51575.26 | 51574.43 | BIC | 105090.67 | 105098.26 | 105167.59 | 105157.98 |

*Notes. B0* represents intercept, *C* crossover point. For models 1 and 2, *B1*and *B2* represents main effects of parenting and temperament, respectively. *B3*represents the effect of parenting-X-temperament interaction. For models 3a-3d, *B1* represents the slope on parenting for the least difficult group, and *B3* the difference in slope on parenting between the most and the least difficult temperament groups. Values in parentheses are standard errors. F vs. 1 stands for an F test of the interaction in Model 2. F vs. 3a stands for an F test of the difference in R2 for a given model versus Model 3a.

bParameter fixed at a certain value; SE is not applicable

\*p < .05. \*\* p < .01. \*\*\*p<.001

Table S3.

*Sensitivity Analysis for Testing Alternative Models for Hyperactivity in Early Adolescence (Temperament Retained as a Continuous Variable)*.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Standard parameterization | | | Re-parameterized regression equation | | | | |
|  | Differential susceptibility | | Diathesis-Stress | |
|  | Parenting and temperament main effects: Model 1 | Effects and interaction of parenting and temperament: Model 2 |  |  |  |  |  |
| Parameter | Parameter | Weak: Model 3a | Strong: Model 3b | Weak: Model 3c | Strong: Model 3d |
| *B0* | 3.07(0.16)\*\*\* | 3.07(0.16)\*\*\* | *B0* | 2.56(0.03)\*\*\* | 2.56(0.03)\*\*\* | 1.19(0.16)\*\*\* | 1.73(0.09)\*\*\* |
| *B1* | -0.36(0.03)\*\*\* | -0.21(0.15) | *B1* | -0.21(0.15) | 0.00 (-)b | -0.47(0.01)\*\*\* | 0.00 (-)b |
| *B2* | -0.00(0.00)\*\* | -0.00(0.00)\*\* | *B3* | -0.00(0.00) | -0.00(0.00)\*\*\* | 0.00(0.00)\*\* | -0.00(0.00)\*\*\* |
| *B3* | - | -0.00(0.00) | *C* | 0.00 (-)b | 0.00 (-)b | 4.95 (-)b | 4.95 (-)b |
| *R2* | .022 | .022 | *R2* | .043 | .042 | .043 | .033 |
| *F vs.* 1 |  | 0.91 | *F vs.*3a |  | 3.64 | - | 145.86 |
| *df* |  | 1, 135.48 | *df* |  | 1, 14538 | - | 1, 14538 |
| *p* |  | .34 | *p* |  | .06 | - | <.0001 |
| AIC | 28363.03 | 28362.91 | AIC | 80477.12 | 80475.12 | 80784.28 | 80782.28 |
| BIC | 28365.03 | 28364.91 | BIC | 80507.55 | 80497.94 | 80814.71 | 80814.71 |

*Notes. B0* represents intercept, *C* crossover point. For models 1 and 2, *B1*and *B2* represents main effects of parenting and temperament, respectively. *B3*represents the effect of parenting-X-temperament interaction. For models 3a-3d, *B1* represents the slope on parenting for the least difficult group, and *B3* the difference in slope on parenting between the most and the least difficult temperament groups. Values in parentheses are standard errors. F vs. 1 stands for an F test of the interaction in Model 2. F vs. 3a stands for an F test of the difference in R2 for a given model versus Model 3a.

bParameter fixed at a certain value; SE is not applicable

\*p < .05. \*\* p < .01. \*\*\*p<.001

Table S4.

*Sensitivity Analysis for Testing Alternative Models for Conduct Problem in Early Adolescence (Temperament Retained as a Continuous Variable)*.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Standard parameterization | | | Re-parameterized regression equation | | | | |
|  | Differential susceptibility | | Diathesis-Stress | |
|  | Parenting and temperament main effects: Model 1 | Effects and interaction of parenting and temperament: Model 2 |  |  |  |  |  |
| Parameter | Parameter | Weak: Model 3a | Strong: Model 3b | Weak: Model 3c | Strong: Model 3d |
| *B0* | 1.06(0.09)\*\*\* | 1.06(0.09)\*\*\* | *B0* | 0.87(0.02)\*\*\* | 0.87(0.02)\*\*\* | 0.15(0.10) | 0.41(0.06)\*\*\* |
| *B1* | -0.19(0.02)\*\*\* | -0.10(0.09) | *B1* | -0.10(0.09) | 0.00 (-)b | -0.23(0.03)\*\*\* | 0.00 (-)b |
| *B2* | -0.00(0.00)\* | -0.00(0.00)\* | *B3* | -0.00(0.00) | -0.00(0.00)\*\*\* | 0.00(0.00) | -0.00(0.00)\*\*\* |
| *B3* | - | -0.00(.00) | *C* | 0.00 (-)b | 0.00 (-)b | 4.95 (-)b | 4.95 (-)b |
| *R2* | .017 | .017 | *R2* | .030 | .030 | .030 | .022 |
| *F vs.* 1 |  | 1.04 | *F vs.*3a |  | 3.42 | - | 123.57 |
| *df* |  | 1, 119.95 | *df* |  | 1, 14538 | - | 1, 14538 |
| *p* |  | .31 | *p* |  | .06 | - | <.0001 |
| AIC | 12737.30 | 12736.84 | AIC | 58557.66 | 58555.66 | 59252.29 | 59250.29 |
| BIC | 12739.30 | 12738.84 | BIC | 58588.08 | 58578.48 | 59282.71 | 59273.11 |

*Notes. B0* represents intercept, *C* crossover point. For models 1 and 2, *B1*and *B2* represents main effects of parenting and temperament, respectively. *B3*represents the effect of parenting-X-temperament interaction. For models 3a-3d, *B1* represents the slope on parenting for the least difficult group, and *B3* the difference in slope on parenting between the most and the least difficult temperament groups. Values in parentheses are standard errors. F vs. 1 stands for an F test of the interaction in Model 2. F vs. 3a stands for an F test of the difference in R2 for a given model versus Model 3a.

bParameter fixed at a certain value; SE is not applicable

\*p < .05. \*\* p < .01. \*\*\*p<.001