

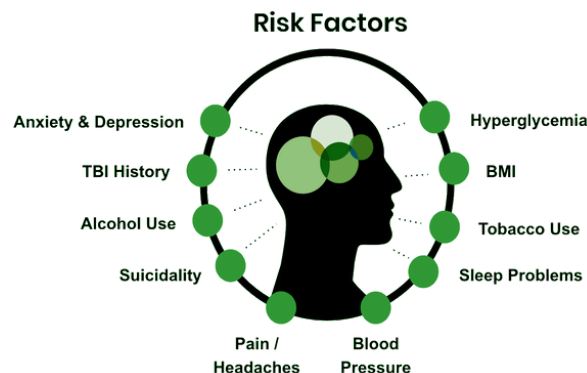
Ceresant BrainDash

Offering Real-Time Risk Assessment and Monitoring Linked with Management Options

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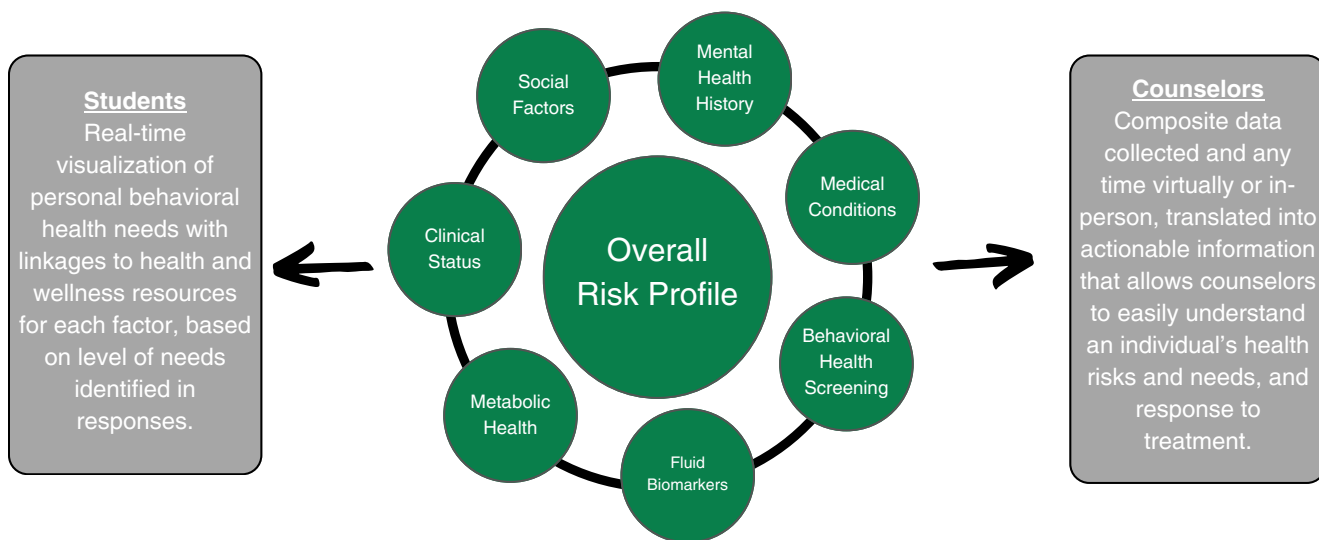
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Brain health and wellness are foundational to scholastic success and long-term outcomes for children. The tridirectional relationships between brain, cognitive and mental health support the concepts that 1) addressing overall brain health reduces mental health risks and enhances cognitive performance, 2) early mental health interventions can improve cognitive performance and protect long-term brain health, and 3) addressing cognitive performance decreases mental health risks and nurtures long-term brain health. A range of biological mechanisms (e.g., neural plasticity, stress response, inflammation, brain reserve) impact cognitive, mental and overall brain health across the lifespan. Addressing modifiable risk factors in one's youth, reducing the effects of regular, daily life stressors, enhancing scholastic coping skills, and supporting day-to-day variations in brain functioning can simultaneously reduce current mental health challenges while also building cognitive reserve for later life. BrainDash incorporates and leverages established scientific foundations of optimal brain functioning by combine well-accepted brain health approaches with validated assessment tools in a novel way to enable measurable outcomes that provide actionable information. The cumulative effects of early interventions, where small changes in youth compound over time through established healthy patterns and neural pathways, combined with the unique focus of building cognitive reserve, monitoring active behavioral stressors, and addressing real-time brain functioning can meet immediate mental health needs, support near term cognitive performance and enhance long-term brain function.



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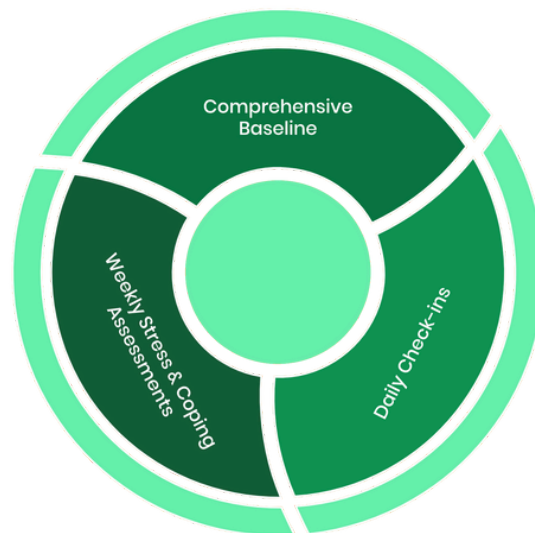
BrainDash works in a tiered, comprehensive approach to enhancing brain wellness by 1) holistically assessing and optimizing foundational brain health factors, 2) regularly surveilling and managing stress and coping issues, and 3) actively assessing and addressing real-time challenges. Utilizing cutting edge analytics and technology that builds upon decades of brain health and dementia prevention research to create an evidence-influenced foundation for youth behavioral health, BrainDash targets a range of risk factors early when basic adjustment and interventions can have the most impact, monitors real-time brain stress and coping to provide direct insight and allow proactive responses, and allows students, school and teachers to addresses day-to-day brain functioning challenges using established care pathways. The power of addressing multiple elements simultaneously through shared risk factors creates positive feedback loops in brain wellness. This systems-level integration that leverages existing school infrastructure and includes student and family involvement, and delivers both targeted and universal prevention and management approaches. The multi-tiered approach addresses immediate, near time and underlying causes built into a platform that simultaneously protects long-term brain health, optimizes cognitive performance and reduces behavioral health risks, generating multiple benefits across the lifespan. Rather than waiting for difficulties to arise, the platform builds brain reserve, resilience and efficiency to prevention problems, which is atypical in the current landscape of youth mental health solutions.



BrainDash Platform:

1. Baseline Brain Health Risk Factor Assessment (Table 1): Completed at beginning of each semester by student/family and linked with recommendations for management and risk reduction.
2. Student Performance Measures (see Table 2) Completed daily by teacher, parents and student to allow for tailored approaches to school and home situation.
3. Stress and Coping Skills Assessment (Figure 1 and 2) Completed biweekly by student with tailored recommendations to optimize stress and coping.

Multi-Modal Assessment Model



Reference: Livingston, Gill; Huntley, Jonathan ; Liu, Kathy Y ; Costafreda, Sergi G ; Selbæk, Geir ; Alladi, Suvarna ; Ames, David ; Banerjee, Sube ; Burns, Alistair ; Brayne, Carol ; Fox, Nick C ; Ferri, Cleusa P ; Gitlin, Laura N ; Howard, Robert ; Kales, Helen C ; Kivimäki, Mika ; Larson, Eric B ; Nakasujja, Noeline ; Rockwood, Kenneth ; Samus, Quincy ; Shirai, Kokoro ; Singh-Manoux, Archana ; Schneider, Lon S ; Walsh, Sebastian ; Yao, Yao ; Sommerlad, Andrew ; Mukadam, Naaheed: Dementia prevention, intervention, and care: 2024 report of the Lancet standing Commission. The Lancet (British edition), 2024;404 (10452): 572-628.

Table 1
BrainDash Risk Factors Assessment

Measures	Data Elements	Target Factor
Childhood SES (Zip Code)	Social Economic Status	>Medium Low
Identified Racial Classification	Ethnicity	Non-White White
Adverse Childhood Exposure-10 (ACE-10)	Childhood Trauma	0 1-3 4-10
Acute Concussion Evaluation	Prior TBI	No Yes
Personal Depression History	Yes/No	No Yes
Personal Anxiety Disorder History	Yes/No	No Yes
Personal History of Other Mental Health Conditions	Yes/No	No Yes
Family Anxiety Disorder History	Yes/No	No Yes
Family Depression or Suicidality History	Yes/No	No Yes

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Table 1 (continued)
BrainDash Risk Factors Assessment

Patient Health Questionnaire-9 (PHQ-9)	Depression	0-4 5-14 >15
Generalized Anxiety Disorder (GAD-7)	Anxiety	0-4 5-14 >15
Satisfaction With Life Scale (SWLS)	Satisfaction	>15 10-14 <9
Sleep Quality Scale (SQS)	Sleep	>15 10-14 <9
International Physical Activity Questionnaire (IPAQ)	Aerobic Exercise	High Level Moderate Level Low Level
Rapid Eating Assessment for Participants-Short Form (REAP-S)	Diet	13-22 23-31 32-39
Body Mass Index (Kg/Cm ² ; BMI)	Obesity	18.5-24.9 <18.5 or 25-29.9 ≥30

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Table 2
Performance Questionnaires

Measures	Person Completing
Level of Energy	Teacher
Appears Well-Rested	Teacher, Parent
Social Integration	Teacher, Parent
Prepared for Classwork	Teacher
Schoolwork Engagement	Teacher
Class Participation	Teacher
Nutritional Intake	Teacher, Parent
Sleep Quality	Parent, Student
Physically Feeling Well	Student
Emotionally Feeling Well	Student

Figure 1 Perceived Stress Scale

A more precise measure of personal stress can be determined by using a variety of instruments that have been designed to help measure individual stress levels. The first of these is called the Perceived Stress Scale.

The Perceived Stress Scale (PSS) is a classic stress assessment instrument. The tool, while originally developed in 1983, remains a popular choice for helping us understand how different situations affect our feelings and our perceived stress. The questions in this scale ask about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer fairly quickly. That is, don't try to count up the number of times you felt a particular way; rather indicate the alternative that seems like a reasonable estimate.

For each question choose from the following alternatives: 0 - never 1 - almost never 2 - sometimes 3 - fairly often 4 - very often

_____ 1. In the last month, how often have you been upset because of something that happened unexpectedly?

_____ 2. In the last month, how often have you felt that you were unable to control the important things in your life?

_____ 3. In the last month, how often have you felt nervous and stressed?

_____ 4. In the last month, how often have you felt confident about your ability to handle your personal problems?

_____ 5. In the last month, how often have you felt that things were going your way?

_____ 6. In the last month, how often have you found that you could not cope with all the things that you had to do?

_____ 7. In the last month, how often have you been able to control irritations in your life?

_____ 8. In the last month, how often have you felt that you were on top of things?

_____ 9. In the last month, how often have you been angered because of things that happened that were outside of your control?

_____ 10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

Figure 2
Brief Resilience Coping Scale

BRCS Instructions: Consider how well the following statements describe your behavior and actions.	(1) Does not describe me at all	(2) Does not describe me	(3) Neutral	(4) Describes me	(5) Describes me very well
I look for creative ways to alter difficult situations.					
Regardless of what happens to me, I believe I can control my reaction to it.					
I believe I can grow in positive ways by dealing with difficult situations.					
I actively look for ways to replace the losses I encounter in life.					

BRCS Interpretation	Score Range
Low resilient copers	4-13 points
Medium resilient copers	14-16 points
High resilient copers	17-20 points

EMDR Early Intervention and Crisis Response: Researcher's Toolkit | version 03.2018 | © 2014-2018
<http://.emdrresearchfoundation.org/toolkit/>

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