

Chapter 2

The Integration of Neuropsychology in Pediatric Care Teams



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In the pediatric medical setting, many complex medical disorders are managed by teams of clinicians, including a coordinated team of physicians and specialists, as well as surgeons and therapists. These core teams follow patients and identify risk factors that may require referrals outside of the team and help to prioritize necessary treatments/interventions. Their goal is to establish individualized and comprehensive treatment plans that are responsive to changes in disease presentation and level of severity. These teams will often follow patients from birth through early adulthood, depending upon the disease/condition and availability of local adult providers.

In this context, teams often refer out for specialty care; at times, this can include consultations with psychologists, psychiatrists, or neuropsychologists. These consultations can be sufficient, particularly for patients with medical conditions that are not typically associated with substantial changes in cognitive development (e.g., asthma, cystic fibrosis, diabetes). However, for patient populations with known changes in brain development (e.g., hydrocephalus, cerebral palsy) or when the diagnosis is predicated on changes in brain development or trauma (e.g., brain tumor, head injury, stroke), a shift from a consultative model to the inclusion of a neuropsychologist on the medical treatment team becomes essential. Although the neuropsychologist continues to play a consultative role to families, their interaction with the medical team can have a direct influence on patient care and treatment planning.

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How Pediatric Medical Conditions Affect the Young Brain

Whole Child Model

The difference between pediatric and adult patients is not just the physical size of the patient. Children are inherently different patients as they are in the midst of ongoing brain development. For adults, we often assume that brain development has followed a normal trajectory and that a recent injury or disease has affected a typically developed brain. The goal of the evaluation is to determine how that illness or injury has altered their cognitive status and the magnitude of discrepancy between normal expectations and their current functioning. However, for children, this process is different because, by nature, the interruption alters not only their current cognitive status but their future brain development.

- *Timing/developmental status:* The timing of the insult for children has greater ramifications, as the effects on the developing brain vary based upon the child's age at the time of the injury or disease onset. For example, some children have underlying structural changes in brain development that may be secondary to a genetic disorder or changes in neuronal migration; these neurodevelopmental disorders change the child's whole developmental trajectory. From the time that these children are born, their access to information and learning style has been changed. Although babies who are born prematurely or experience trauma during birth also begin their lives on a different developmental trajectory, their course will be different due to the underlying etiology of the changes in brain development. Other children have a typical developmental course that is altered by the injury or disease onset at a later age, shifting the developmental trajectory after a period of typical development. Skills that have already begun to develop can be affected differently than those that have yet to emerge. Many skills which are known to develop later in childhood, such as executive functioning skills or abstract reasoning, are therefore affected by more frequent childhood medical disorders [1].
- *Localization/disease process:* It is essential to evaluate whether the change in brain development is isolated, such as an infarct or tumor, or more global, such as an anoxic episode or hydrocephalus. The age at diagnosis affects the relative state of brain development; therefore, using the adult literature to make assumptions about which skills would be affected by disease or injury in a specific location can at times lead to inaccurate conclusions. For example, there is some flexibility in brain development during childhood, often referred to as neural plasticity [2–4], to allow for skills to develop in the context of early changes in brain development or damage to neural tissue.
- *Cascading effects:* For patients who experience a more global insult, changes in speed of processing and the rate of developmental progression are often affected; even if children remain within typical expectations for age shortly after treatment, we expect for the patient to begin a different developmental trajectory

moving forward. We can then see slowed achievement of skills over time, relative to same age peers, resulting in increased discrepancies from expectations in the absence of skill regression [5, 6]. Some medical disorders can also include a profile of regression. In addition, we can see atypical developmental patterns, resulting in a more scattered skill development profile, with some age-appropriate skills and some domains of significant difficulty.

- At times, medical disorders can also change children's access to information (e.g., changes in vision secondary to the location of a brain tumor, hearing loss secondary to chemotherapy treatment), communication abilities (e.g., the loss of verbal speech secondary to a tracheostomy), or loss of mobility due to infarct or spinal cord tethering. These can also shift the child's developmental trajectory.
- *Intervention/treatment-related effects:* The effects of some medical treatments can also change brain development in its scope, frequency, and magnitude. Patients may experience both localized and global treatments, such as neurosurgery, focal radiation, and global chemotherapy, to treat a brain tumor, for example. While medical management of the disease is the priority, the late effects of the treatment can have lasting ramifications on developmental outcomes [7]. Therefore, when conceptualizing changes in brain development, all of these factors need to be carefully considered.
- *Changing expectations:* It is essential to consider that the environment is full of changing (typically increasing) expectations for children, as their environment shifts along with the developmental progress expected for typically developing children as they age. School demands tend to increase gradually each year, with more substantial changes in the independent functioning demands noted as children shift from elementary, to middle, and eventually to high school. Demands around functional independence also increase at home. However, also of importance are the decreasing supports that are typically available to children as they age; this decrease in support can be as problematic as the increases in demands.

For example, a child diagnosed with a left temporal lobe tumor at age 4, who was treated with surgery, radiation therapy, and chemotherapy, will have a different developmental trajectory than a child with a similar diagnosis and treatment at age 12. In addition, while their specific profiles may have some similarities due to the risk profiles associated with a tumor in the left temporal lobe, their strength and weakness profile (neurobehavioral profile) will be inherently different from a child whose medical diagnosis and treatments are of a different etiology.

Neuropsychological assessment is designed to carefully examine the brain-behavior relationship in the context of the child's current age, the age of injury or insult, and with consideration of both expected treatment-related effects and individual differences, including family history. These results are then related to expectations given important individual characteristics, the expected neurobehavioral profile given the patient's medical history, and age-related expectations.

Methods for Delivery of Neuropsychological Care

Historically, pediatric neuropsychologists have provided comprehensive assessments to evaluate changes in behavior that are linked to changes in brain development secondary to neurological diseases/disorders or brain-directed treatments (e.g., neurosurgery, chemotherapy, etc.). These evaluations were at times comprehensive, evaluating the whole child, including the assessment of intellectual abilities, language development, visual spatial reasoning skills, memory, attention, executive functioning skills, emotional functioning, and adaptive skill development. Given how integral school functioning is for children, particularly for those with (suspected) changes in brain development, full neuropsychological assessments have typically also included some screening of academic skills. These assessments are often repeated every couple of years given the significant changes in brain development as well as increasing environmental expectations as children age. For certain medical populations, more targeted assessments are warranted. This can occur with a sudden change in symptoms or cognitive functioning, evaluating changes in treatments, and prior to neurosurgery.

Referral Model

A comprehensive neuropsychological evaluation is warranted for most patients who have complex medical needs, particularly those with medical conditions that directly affect the central nervous system. In many institutions, this includes a referral to an outside clinician who can provide consultation to the family and medical team around a child's current functioning. Although most essential in early childhood (6–9 years) and as they are transitioning to adulthood (16–18 years), many neuropsychologists follow patients with evaluations every 3–4 years to monitor progress as environmental demands increase.

All pediatric neuropsychologists are trained in brain-behavioral relationships, child development, and behavioral health issues. However, like all providers, neuropsychologists tend to specialize. Many, for example, work with children who have developmental disabilities (e.g., autism), learning disabilities (e.g., dyslexia), or behavioral health issues (e.g., bipolar disorder). Although these specialists can certainly provide consultation to medical teams, they typically do not know the intricacies of specific medical conditions, the potential effects of treatments and procedures, the frequent presentations and comorbidities, and the typical developmental trajectory of these patients. Medical centers often have a group of trained providers who are familiar with a number of neurological and medical issues and can easily consult teams in medical systems; they are aware of the typical struggles of medically complex children and are well versed in brain-behavior relationships after changes in central nervous system development.

Integrated Team Care Models

The complexity of some pediatric conditions that involve multiple organ systems requires integrated care models that can flexibly adapt to the current needs of the patient; as more complex patients are surviving, clinics have evolved to include additional medical specialists, psychologists, and therapists. Ideally, pediatric neuropsychologists who specialize in medical and neurological conditions are embedded in specific pediatric treatment teams. This allows for the neuropsychologist who is specialized in a specific patient population to complete full evaluations and also provide more direct consultation to the medical team. For example, they can provide assessment of the patient's cognitive abilities, consult to the medical team on potential late effects or postsurgical changes, and facilitate targeted intervention planning for ongoing medical management. There are several different group treatment models that are currently used in practice; we have focused on multidisciplinary, interdisciplinary, and transdisciplinary.

- *Multidisciplinary*: Multidisciplinary team models are designed to include multiple different providers across disciplines that separately see the same patient and consult with other clinicians about the care of the patient. Many specialty clinics create multidisciplinary models; ideally, this provides access to multiple providers who tend to work together when providing care to specific populations. Families can come to one clinic visit in a “one-stop-shop” model and see several providers around individual aspects of need [8]. For example, a patient in spina bifida clinic would be able to meet with a neurosurgeon, urologist, orthopedic surgeon, and several other providers in an afternoon clinic to review imaging data and current concerns and create future plans.
- *Interdisciplinary*: “Interdisciplinary team approaches integrate separate discipline approaches into a single consultation” [9]. The integration of history and symptoms, assessment of current issue, and diagnostic formulation are completed as a team with the patient at one time, in conjunction with the creation of intervention plans and short- and long-term management goals [8, 9]. Psychological and neuropsychological assessments can be instrumental in evaluating the potential success or possible failure of some interventions; for example, cognitive and psychological evaluations are standard in the eligibility process for solid organ transplant and some surgical interventions, such as bariatric surgery for weight loss, in order to evaluate the patient's ability to follow complex instructions necessary for success following the procedures. In addition, information on future levels of independent functioning gathered through neuropsychological evaluations can be instrumental in the creation of recommended methods of surgical management for specific medical issues. For example, an oncologist, neurosurgeon, and radiologist work together to create a comprehensive treatment plan for a patient with a new diagnosis of a brain tumor. In interdisciplinary models, the care providers maintain their individual relationships with the patient but work together to create a comprehensive care plan.

- *Transdisciplinary*: Transdisciplinary team models also include multiple specialists but can be broader to include researchers and caregivers; the emphasis is on the creation of one comprehensive treatment plan that includes the collaboration of involved team members. The knowledge of the specialists and team providers is integrated into the treatment planning provided by all care providers. Given the sheer number of involved clinicians, the establishment of a transdisciplinary team can be extremely challenging. Epilepsy surgical teams often work in transdisciplinary models; when patients are evaluated for treatment options, neuroimaging, neuropsychological assessment, and Wada procedures are completed and reviewed by the team (e.g., neurologists, neurosurgeons, neuropsychologists, etc.) in the creation of a comprehensive treatment plan.

Contributions from Neuropsychologists to Group Models

Regardless of the design of the clinic, pediatric neuropsychologists can contribute to a variety of roles in patient care, in addition to conducting traditional comprehensive neuropsychological evaluations.

Consultation to the Medical Team

Neuropsychologists have the benefit of spending a great deal of time with patients over the course of an evaluation; this affords us the opportunity to informally gather information about family systems, compliance with medical regimens, engagement with the community, and trust in community systems and agencies that medical team members often do not get the opportunity to hear about. We interact with patients, their family systems, their school, and their provider networks and therefore can be privy to their personal belief systems and their methods of interacting with systems. For patients with complex medical needs, their medical appointments can often be brief and focused on physiological needs and problems despite the frequency of their visits with their physicians. In addition, in the pediatric medical model, neuropsychologists are also one of the few providers who meet with patients alone to complete assessments and often complete interviews and feedback sessions with parents/caregivers independently, allowing us to gather information that patients and their parents/caregivers may have been concerned about sharing in front of each other.

- *Cognitive problems*: In the context of multidisciplinary, interdisciplinary, and transdisciplinary clinic models, brief consultative appointments with patients (even 15–20 minutes) provide an opportunity to discuss the patient's current status, monitor their developmental progress for a new onset of problems or increasing difficulty, and evaluate the need for services. It is important to continue to

evaluate for the onset of new medical/cognitive issues that result in problems with learning (in the academic, home, and community settings) given the developmental nature of pediatric patients. These visits can be billed through health and behavior codes designed to provide support to patients with medical diagnoses. However, many medical clinics subsidize the involvement of neuropsychologists as well, given their contributions to the team.

- Neuropsychologists also can speak to changes in child development secondary to complex neurocognitive profiles and/or behavioral health difficulties. Given medical complexity and changes in the rate of skill acquisition, we will often see differences in behavioral presentations. At times, these changes in presentation are consistent with their neurocognitive profiles, such as increased behavioral problems in children with language disorders. In contrast, it may be that a developmentally appropriate behavior is demonstrated at a later age than expected.
- Neuropsychologists often voice safety concerns that may influence treatments and procedures. For example, many patients are not capable of awareness of potential victimization, and the number of times per day they are disrobed for necessary medical cares (e.g., urinary catheterization) increases their risks; they may be safer with surgical intervention to create a stoma to reduce the need for catheterization through their urethra.
- *Noncompliance*: When noncompliance with medical regimens is broached as a concern, neuropsychologists are uniquely qualified to provide an understanding of the patient's ability to understand their medical treatment plans and recommendations, assess the patient's profile and potential cognitive factors related to their illness, evaluate the contribution of family history and environmental factors, and create a training model to evaluate compliance.
- Neuropsychologists can also help to differentiate between emotional, cognitive, and practical impediments to compliance. Once there is an understanding of their complex cognitive profile, behavioral health issues such as anxiety or depression can significantly affect compliance with medical regimens and confuse physical symptom profiles. For example, a patient with a brain tumor treated with chemotherapy and radiation therapy is expected to have slower information processing speed; this can be further slowed by symptoms of depression, which can be confused for a potential late effect of treatment.
- Medical teams often need to provide written instructions for those with memory impairments, to adjust recommendations for those with more limited vocabulary, and to be concrete and concise about potential side effects, complications, or other treatment information.
- Physicians can often be challenged by young adults who are noncompliant despite the best efforts of the teams and their families. In pediatric care facilities, teams are used to working with families, and at times community-based supports, to ensure that children have access to appropriate levels of care. However, these discussions can become more complex when young adults make choices about compliance with medical recommendations, particularly when the choices are in contrast to medical team recommendations and/or family wishes. In these instances, it is essential that the neurobehavioral profile of the young adult be

considered in the contract for medical care. When the medical team or provider feels it is necessary to terminate care due to noncompliance, significant cognitive or behavioral health impairments can complicate the picture. It is essential to have clear and up-to-date information on patients to ensure comprehension on the patient's behalf, as well as adequate and appropriate documentation for the medical team. It would be inappropriate, for example, to send a certified letter terminating care to a young adult with first-grade reading abilities, as they clearly do not have the requisite skills to ensure adequate comprehension.

- For example, one young adult patient with a moderate intellectual disability continued to gain weight despite concerns and repeated recommendations from her medical team, so much so that her airway was compromised. Discussions with the patient and her mother indicated she had stopped drinking soda and eating candy as had been recommended. However, it took further interview and a lengthy series of yes/no questions (rather than open-ended questions) to determine that she had replaced the soda with juice and did not understand recommended serving sizes. With concrete recommendations, such as "only drink water," "eat no portion larger than your hand," and "you must have five vegetables each day," she was able to lose weight without surgical intervention. In order to shift the manner of intervention by the medical team, careful consideration of the young adult's cognitive and emotional needs was necessary.

Consultation with Families

A significant role in any multidisciplinary clinic involves working with individuals to assume responsibility for their medical care, with a necessary understanding of typical physiological development, their medical condition(s), possible symptomology, and necessary treatment regimens. For any adolescent and young adult, management of medical emergencies and the logistics of insurance coverage can be a challenge. Children and young adults with chronic medical conditions have to develop an understanding of the symptoms and complexity of their medical disorder, acquire knowledge to understand the disorder and its management, and understand their own personal medical history (e.g., reactions, prior treatments). Given that many medical conditions can affect neurocognitive development, the ability to effectively acquire this information and the cognitive capacity needed to complete day-to-day care and effectively manage medical emergencies are even more of a challenge. In addition, parents of these children with chronic conditions have been managing their medical care for years; therefore, shifting the day-to-day management can be complicated by parent's understanding of their children's capacity, trust in their children's skills, the level of conflict in their relationship, and a history of noncompliance or poor engagement by teenagers. For many young adults, having a signed release on file for their parents allows for the young adult to continue to receive some level of support throughout this transition.

There are many pediatric medical disorders that up until the past few decades have not resulted in long-term survival. One of the starkest examples is the inclusion of central nervous-directed therapy in the treatment of pediatric leukemia. Up until the 1970s, when CNS-directed treatment was included in therapy, acute lymphoblastic leukemia's cure rates were extremely low; now, survival rates are estimated at 90% [10]. For patients with spina bifida, the use of intermittent catheterization to drain the bladder and protect the kidneys resulted in reduced mortality. There have been significant improvements in cystic fibrosis survival since the 1930s, when 70% of sufferers died in infancy, to a median predicted survival in 2015 of 45 years [11].

With the advent of more complex and successful medical care models, we have more patients surviving into young adulthood. Although they often transition to adult medical care models in their late 20s to early 30s, pediatric care must now also prepare young adults to assume responsibility for their own care. Independent functioning becomes an essential long-term goal despite significant medical needs and potential cognitive complications from their own medical disease and care.

The first step in helping parents share some responsibility with their adolescents is to accurately assess the cognitive capacity of the patient to understand and manage their own medical care. It is essential for parents to understand their child's ability to comprehend complex information, manage medical terminology, hold information in memory, and process information effectively and efficiently enough to ask questions and anticipate potential consequences (of treatments or noncompliance). For patients who have been closely followed over time, data is available on both cognitive capacity and the rate of development of adaptive skills and functional independence. Although serial assessments through middle childhood are helpful to understanding a child's general level of functioning, an updated assessment is essential as these adolescents are reaching adulthood (16–17 years of age). In young adulthood, the evaluation measures change to begin to evaluate more comprehensive and complex reasoning skills that are expected in adult development and are more consistent with the skills necessary for carefully evaluating medical procedures and treatment options. It also allows for an in-depth assessment of their current adaptive skills, including not only independence in activities of daily living but also their ability to manage money, manage a household, earn and maintain a job, and safely interact with the community. Although some of these domains are outside of the direct needs of the medical team, the information helps to create a more comprehensive picture of the young adult's capabilities and can directly affect their ability to engage in care.

For those young adults who are not able to successfully function independently, consideration of a legal guardian is critical. For some young adults, adolescence can be a time of experimentation and adherence issues; however, their ability to understand the potential ramifications of their actions is generally intact. For those with more intensive needs, particularly those who will have long-standing requirements for support, guardianship is often essential. While guardianship can be limited to medical decision making in most states, neuropsychological consultation can help to delineate specific domains of need. It is essential to understand that guardianship

is not a panacea for noncompliance in young adults but is based upon careful examination of a young adult's capacity for decision making. Guardianship often includes decision making supports for medical care treatment (including behavioral health), financial decision making, and social decision making (e.g., job training, living placements, peer group access, etc.). For individuals with more transient needs—such as those with cognitive ramifications of their medical disorder, including those who are post-surgery or under treatment, or those patients who have behavioral health issues—the degree of support and length of guardianship can be modified by the legal system. In some states, such as Massachusetts where we practice, it is essential to clarify whether these skill deficits are global or more specific, as there are multiple vehicles for obtaining guardianship through the probate courts. It is important to be aware that many of these systems were put in place for aging adults who are losing skills over time, whereas our young adult patients have not yet developed these skills/abilities; therefore, the process can be overwhelming and challenging for families to navigate, particularly without a comprehensive understanding of their child's needs.

The management of symptoms is one of the most challenging aspects of assuming responsibility for their own care. For example, when patients with hydrocephalus have a headache, it could potentially be due to a shunt malfunction indicating an urgent need for neurosurgical intervention. However, it could also be due to stress, dehydration, high blood pressure, or sinus infection (or any other variety of reasons). The patient's ability to evaluate the severity and length of symptoms, to properly attend to other co-occurring symptoms, and to rule out potential issues due to a lack of symptoms is essential. Parents often complete this medical care decision tree modeling mentally, acquiring information through a series of what may seem like random questions to rule out other potential issues (e.g., Are you vomiting? Sniffing? Drinking water?). Adolescents learn this skill best through modeling and repeat exposure, which requires a lot of time; this is not a quick process that can occur in the few months before an adolescent turns 18 years of age. In order to develop these skills in their children, parents have to repeatedly provide explicit step-by-step explanations of their thought process, help children understand the implications of certain decisions, and repeatedly review emergency management strategies. Finally, it is also important to consider that many of our young patients have had traumatic experiences that may also be affecting their ability to actively participate in their medical care. Neuropsychologists are able to parse apart cognitive challenges that continue to be longstanding from more transient behavioral health issues that can also affect the patient's ability to engage in their own medical care.

For patients who are capable of assuming at least some level of independent functioning, neuropsychological assessment can help families understand ability levels and help to prioritize which skills should be acquired first. All skill acquisition is developmental in nature and typically requires that basic skills are taught and rehearsed first, prior to the development of more complex skills. Therefore, skills often need to be broken down and taught in an incremental fashion; however, many life skills are typically taught through observation and exposure, rather than via highly structured teaching models. Neuropsychological assessments can provide

families with an understanding of their child's strengths and weaknesses, as well as the domains where they require assistance; therefore, they can better advocate for their young adult in the medical system. These are some of the necessary domains that neuropsychologists often work with families in order to facilitate skill development.

- *Awareness and significance of symptoms and medical conditions:* Patients need to be able to identify their medical conditions, affected parts of the body, current symptoms, and severity and to have a sense of who their medical team includes. For example, a young adult with spina bifida and shunted hydrocephalus who is on dialysis due to end-stage renal disease may tell an emergency room doctor that they are unable to walk but fail to mention their shunt, a history of seizures, and neurosurgical intervention or that they have medication allergies. Following a situation like this, neuropsychological evaluations can help to differentiate between issues with memory, problems with verbal comprehension, and management of emotions and pain in a stressful context.
- *Communication with medical providers:* Patients need to be able to greet medical team members, respond to basic questions, ask questions (even if rehearsed prior), and summarize information from medical visits. Patients need experiences participating in decision making in order to begin to assume the responsibility; many patients can use group meetings in the educational setting (for Individualized Education Programs) and/or medical visits to rehearse listening to complex material, identifying questions, and weighing different options. For complete functional independence in the medical setting, patients need to be able to advocate for themselves, even if in disagreement with medical team members, and the ability to effectively ask questions about their care. The ultimate goal is to be able to speak to medical teams freely and to request what they need (e.g., repetition of information, written step-by-step instructions, teaching/modeling, a private visit). Neuropsychological assessment and consultation become critical to understand the level of reasoning and complex problem-solving that the patient is able to manage independently. Social interaction skills, verbal communication, and memory functioning can also limit functional independence in this domain.
- *Management of daily regimen:* Patients must be able to know the names of their equipment (e.g., braces, hearing aids, catheters), cooperate with daily routines, assume more independent completion of these routines, and manage supplies of medications by alerting parents and eventually medical providers. Patients often require written reminders or electronic alarms in order to keep track of timing and task completion; working with families to identify the patient's ability to use reminders is important. Parent's methods of tracking task completion may be different from those of the children; for example, there are now smartphone applications that can be set to show images of the medication to take at that certain time (and allow for a check off if it was completed) rather than using a plastic pill sorter. In addition to the ability to evaluate the child's capacity for skill development in this domain, neuropsychologists also often help to mediate challenging conversations between adolescents or young adults with their parents; the transition of power and responsibility for many of these patients can

be extremely slow and fraught with emotion, as parents are concerned about their child's safety and well-being.

- *Managing access to records and payment information:* Patients need to understand that there is a medical record that they are able to access, use the information to prepare for future visits and extract recommendations, and manage payment/insurance issues. It is also essential that parents recognize that, with different skills, their children may need to complete tasks in a slightly different manner. For example, many of our parents would prefer to call and speak to an appointment coordinator, whereas their children may prefer to schedule through our online computer system (at 3 a.m.). Access to online medical record systems has diminished the need for the multiple three-ring medical binders that many parents used to bring with them to visits.
- *Management of lifestyle choices:* Adolescence and young adulthood are times that developmentally include separation from parents, engagement in social networks, and exposure to new experiences and potential risky behaviors. Although independence and the development of identity are essential tasks during this age range, engagement in risk-taking behaviors can have more dire consequences for those with medical conditions (e.g., seizure threshold is affected by alcohol consumption), and many of our patients are at elevated risk for victimization given their neurocognitive profiles. For example, patients with chronic medical conditions require treatments at school/day programs that involve physical touch (e.g., physical therapy, assistance with changing or walking) or nudity (e.g., catheterization, help dressing). At times, cognitive limitations can affect our patient's ability to discern appropriate from inappropriate touch; their typical high compliance with adult/care provider requests can further increase their risks in these contexts. In addition, the desire to be socially connected with others can increase the likelihood of victimization (both online and in person) and requires close monitoring and frequent supervision.

Closing Remarks

Overall, the roles of a neuropsychologist in a pediatric care model can vary significantly depending upon the nature of the disease, the complexity of the medical treatment regimen, and the cognitive status of the patients. Their active engagement can vary between consulting to other team members directly, patients, and families and working with others in the community to help bridge the gap between medical teams and educational and vocational programs. The transition into school, and out of childhood, is a significant transition where neuropsychological supports are most essential.

Chapter Review Questions

1. Why is the frequency of follow-up with neuropsychology different for children and adults?
2. Name three different roles that the neuropsychologist can offer to support patients as a member of the medical treatment teams.

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