



Competing Demands of Young Adulthood and Diabetes: A Discussion of Major Life Changes and Strategies for Health Care Providers to Promote Successful Balance

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Young adults (YAs) are often faced with many new transitions and major milestones specific to their life stage. For YAs with diabetes, it can be particularly difficult to balance diabetes management with the age-typical demands of young adulthood. Clinicians can play an important role in helping YAs navigate major life changes and find balance in the competing demands of young adulthood, while protecting their health and well-being.

Young adulthood is a crucial developmental period with unique features and challenges (i). The aims of this review are to 1) describe the unique developmental tasks and challenges of this age-group and their impact on diabetes management and 2) provide strategies and considerations for health care providers (HCPs) to engage and support young adults (YAs) with diabetes.

Entanglement of Major Life Changes and Diabetes Management

The additive effect of multiple major life changes during the period of young adulthood, and ultimately the transition to traditional adult roles, can profoundly influence YAs' experiences of living with diabetes (2–5). The competing demands that take place during these major life changes can affect YAs' problem-solving abilities, coping skills, and diabetes management. These major life changes include entering new environments, taking on more financial responsibilities, adopting new roles and expectations, forging new relationships, and navigating health care transitions.

New Environments

One common, major life change in young adulthood is moving out of the childhood home and into a new living situation (e.g., dormitory in college, apartment with friends, home with a partner, or military service). In fact, this relocation often triggers a series of other major life transitions that we will discuss in greater detail later in this review. New environments may have particular implications for YAs living with diabetes (6,7), such as needing to find a new diabetes

HCP, new insurance coverage, or a new pharmacy. Although many YAs may have worked toward increased independence before relocating, a physical transition out of the home may drive a significant change in the parent-child relationship (8–10). For example, YAs and their parents will need to determine who will be responsible for certain aspects of diabetes care such as ordering supplies and prescription refills, while also learning the amount and type of parent support that will be most beneficial to offer from afar. Without proper supports for this transition, YAs may feel overwhelmed and burdened by these new diabetes self-management responsibilities (ii). Thus, in the midst of physical transition and uncertainty, it is common for YAs to feel overwhelmed, isolated, and burnt out by their sudden independence and self-reliance.

New Financial Responsibilities

The transition to more complete independence also extends to bearing the burden of the cost of diabetes. Most people become financially independent during young adulthood, and recent evidence suggests that YAs with diabetes in the United States carry an overwhelming worry about the financial burden of living with diabetes (12–14). This concern exists across the socioeconomic spectrum and regardless of insurance coverage (15). YAs are responsible for managing diabetes care and other life costs while trying to become financially independent and navigate the health care system alone; this task can be quite daunting, as this degree of independence is likely new for them.

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<https://doi.org/10.2337/dsi21-0009>

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New Roles and Expectations

Changes in physical environment often necessitate changes in roles and expectations, as young adults must meet the expectations of their new circumstances and adjust their diabetes management accordingly to fit this new situation. For example, transition to college life or a new job both institute changes to the environment, social circle, performance expectations, and availability of resources to manage diabetes, which can have a substantial impact on YAs' ability to perform diabetes management easily and effectively (6,16,17). Similarly, diabetes management can also affect YAs' ability to function in their new role. For example, an episode of hypoglycemia before a final exam or a diabetes device alarm interrupting a business presentation can make it more challenging for people to perform to their potential.

Another notable change in young adulthood is identity development. Research suggests that identity is first explored during adolescence and then solidified during young adulthood (18,19). For people with diabetes, the overwhelming presence of diabetes in their life contributes to varying degrees of integration of diabetes into their sense of self (20–23). As YAs begin to define themselves in new roles, they are challenged to incorporate their diabetes identity into each of these roles as well. For example, those who positively identify with diabetes might openly showcase themselves as a person with diabetes by performing diabetes management behaviors in social settings, whereas those who do not consider diabetes to be part of their identity may ignore or hide management behaviors around others. Having a positive identity with diabetes can be challenging to accomplish and subject to change as new stressors emerge, but it has also been shown to be beneficial to overall physical and psychosocial health (22–24).

New Social Supports

One of the most salient changes in young adulthood is the transformation of social support networks, as parents become less present and YAs seek to establish meaningful relationships with friends and romantic partners (1,25,26). As YAs with diabetes explore these new friendships and relationships, diabetes and its management may bring up additional stressors. Worry about negative health effects and adverse diabetes outcomes can impair socialization with peers (27). Likewise, increasing stress and worry about engaging in intimacy may impair relationships with new and long-term partners (28). Furthermore, YAs may be transitioning from relying on their family of origin as a primary source of diabetes-related support to navigating whether and how to enlist support from their friends and romantic partners (29) without the requisite knowledge and

skills to advocate for themselves or educate others about diabetes.

The ability to find and use new sources of peer support is particularly important as young adults navigate their worlds with increased independence (30). Although social support has a positive effect on general well-being, it can be challenging to find when managing multiple new social contexts and people. For example, social engagement with friends has the potential to detract from diabetes care if management is viewed as socially differentiating (31,32). Likewise, a fear of stigma can make it challenging to seek peer support or increase the difficulty of completing daily diabetes management tasks (6). However, other evidence suggests that friends can provide emotional support for diabetes, which can alleviate diabetes distress, reinforcing the potential value of healthy peer relationships (33).

Health Care Transition

Perhaps the most notable diabetes-specific change during young adulthood is the transition from pediatric to adult diabetes care clinics. There is much discussion on how to support a successful health care transition, given the substantial level of stress that often surrounds this transfer of care (34–36). Delays in transitioning care are common, and delays can contribute to gaps in care and increase the risk of being lost to follow-up in adult care (37–40). Some barriers to transitioning care have included not being referred to a particular HCP or given information on how to access a new HCP (41–43) and the need for more preparation and support in the transition process (44).

Qualitative studies on transition experiences have found that some YAs felt unprepared for transition; they reported feeling that adult care was less personalized and experiencing less frequent follow-up with their adult HCP (45). YAs report wanting to feel a sense of personal connection with their HCP, something that may become less available to them once they transition to adult care (6). Moreover, many report having a strong connection with their pediatric HCP that was difficult to break (43,46) and sometimes feeling a struggle to find that same connection with an adult HCP (47).

As noted previously, a significant proportion of YAs experience gaps of 6 months or more in care, raising the risk of suboptimal health outcomes (37,40,42). Interestingly, pediatric HCPs suggest similar barriers to transition, including the lack of established transition protocols or programs and difficulty ending longstanding patient-provider relationships (48). Adult endocrinologists have reported their own barriers to providing care to YAs such as limited access to pediatric records and limited access to referrals for mental health services (49).

Physical and Psychosocial Tolls

According to recent T1D Exchange data, only 10.5% of YAs with type 1 diabetes in the United States are meeting glycemic targets (50); many also experience greater frequency of acute complications (51) and substantially lower rates of diabetes device use compared with older adults (52–54). YAs endorse barriers to using diabetes devices, including physical hassles with wearing devices and not wanting devices to draw attention from others (52,55). Additionally, there is evidence that insufficient insurance coverage contributes to lower diabetes technology adoption among YAs (56). Finally, the experience of life with diabetes is not equal across all YAs, as research documents racial and ethnic disparities in glycemic levels, diabetes device use, and emotional distress among YAs (53,57,58).

Across the life span, people living with diabetes experience higher rates of depression, anxiety, and disordered eating (59–61) than the general population, and YAs appear to follow a similar pattern, especially those with suboptimal glycemic control (60). YAs with type 1 diabetes have higher prevalence rates of disordered eating behaviors than adolescents with type 1 diabetes (62). Additionally, YAs experience higher levels of diabetes distress compared with other age-groups (52,63) and cite key sources of distress including navigating challenges with the health care system, self-consciousness and feelings of stigma around diabetes, day-to-day diabetes management burden, and worries about the future (4).

Strategies for HCPs to Facilitate the Successful Balance of Competing Demands

Effective care requires that HCPs recognize stressors facing YAs, understand the challenge of balancing competing life demands, and adopt a flexible approach to develop and maintain connections with YAs, reduce gaps in care, and improve health outcomes. Below, we discuss strategies to help YAs with diabetes manage the many challenges they encounter by promoting their opportunities for social support, reducing the effort required in health care transition, targeting diabetes education, recognizing the emotional burden of diabetes, and building a therapeutic partnership. We based these suggestions on the reviewed literature and our own clinical experiences.

Promote Support in Day-to-Day Life

Given the higher likelihood of encountering new physical environments and people during young adulthood, YAs with diabetes may benefit from direct discussions about disclosure and finding supports. The first step of attaining new diabetes-specific support is through disclosing one's diabetes to others. However, the way in which YAs may disclose their diabetes may be situation dependent (64). For example, open disclosures

to a university's disabilities office or an employer may be the best approach to ensure safety in case of an emergency or to access appropriate accommodations. To facilitate these open disclosures, HCPs must know where to refer their YA patients when they are seeking accommodations for their diabetes (e.g., company human resources department, campus disability services, the American Diabetes Association [ADA], or other local advocacy organizations). In contrast, passive disclosure may be suggested for social settings. YAs may be able to accomplish a passive disclosure by engaging in diabetes care in front of another person without a distinct verbal disclosure. It is imperative that HCPs understand whether and how individual YAs feel comfortable disclosing their diabetes to others before making recommendations, especially for YAs who are hesitant. Referrals to behavioral health may give YAs a safe place to practice disclosing diabetes in social situations, prepare to experience and respond to a variety of reactions, and learn coping strategies to inoculate them from potential negative reactions to a disclosure.

Given the emphasis on increasing independence at this time of life, it may feel counterintuitive to YAs to seek out more support. However, research shows that YAs who perceive greater peer support demonstrate better diabetes management, particularly if peers have some knowledge of diabetes and the support does not feel intrusive (30). In particular, introducing YAs to peers who have diabetes may be useful in promoting empathy, camaraderie, motivation, and knowledge, as well as reducing diabetes distress (4,65–67).

HCPs can further support YAs by normalizing the need for social support and assisting them in determining with whom they may feel comfortable sharing the emotional or physical burdens of diabetes. If available, HCPs may emphasize opportunities for YA patients to meet each other through clinic-based events. Other external resources such as the College Diabetes Network or appropriate online support networks also provide opportunities for person-to-person interaction. Research upholds the benefits of online support from others with diabetes (65,66), and these resources can be easy to access and recommend.

As peer support increases, YAs may experience a change in the support they receive from parents. For some, parents can be major sources of diabetes-related support (65) and continue to provide tangible aid (e.g., financial assistance and care reminders) (68). However, it is important to note that there is no universal target for amount or type of parent support YAs need; instead, the optimal level will vary among families (69). Here, HCPs can play a role in preparing YAs and their parents for the redistribution of responsibility and changes in support. This effort includes encouraging discussion within families or between YAs and their partners about finding

“the right support” for their situation (e.g., which tasks each party takes on and how parents and/or partners can be supportive), thereby encouraging YAs’ autonomy while promoting their safety.

Importantly, research has emphasized the importance of recognizing individual-specific contexts for supports (70,71). That is, the amount and type of support a YA may need could change over time, in different environments, and after changes to diabetes care or treatment, among other things. Thus, HCPs need to ask questions and remain informed about their YA patients’ current situation and specific needs to provide the proper guidance for attaining support.

Foster Health Care Transition Success

It is important to prepare YAs, step-by-step, for the shift from pediatric to adult care models. A position statement from the ADA noted that transition preparation should include substantial education on independent diabetes management and possible differences in pediatric versus adult care models, as well as a coordinated transfer of care with direct communication between pediatric and adult HCPs (72). Moreover, HCPs should consider the stability of YA patients’ current glycemic levels and environment when timing a transfer of care, as these steps may help to avoid exacerbating any current difficulties. Finally, HCPs should create an individualized, written plan for transition with each YA patient to set expectations (36) and offer referrals for a specific new HCP or clinic to decrease the likelihood of a gap in care (41–43).

Relatedly, transition care clinics may be best used if they use age-appropriate procedures and care delivery models. For example, YAs working full time may require evening clinics to maintain attendance. Other potentially successful strategies include offering phone support, telehealth, group visits, a single half-day dedicated transfer clinic, a transition coordinator, or a combination of these approaches (73–75). In fact, the widespread uptake of telehealth during the 2020 coronavirus pandemic may give HCPs the opportunity to use virtual visits to increase clinic attendance rates and reduce gaps in care among YAs.

Target Education to Stage-Specific Challenges

Based on guidance from the Association of Diabetes Care and Education Specialists (ADCES), comprehensive diabetes education should always be individualized for patients. Additionally, ADCES highlights four time points in which to provide education: at diagnosis, annually, when complicating factors occur, and during major transitions, which characterizes much of young adulthood (76). Thus, HCPs should not assume that YAs who were diagnosed as children have all the necessary

knowledge to manage their diabetes and should offer their YA patients updated diabetes education (77). Similarly, to facilitate individualized education, HCPs should have on hand materials geared toward YAs and specific to the management of either type 1 or type 2 diabetes (46).

Furthermore, HCPs should be ready if YAs express stress or frustration with managing health insurance. In this period, some YAs will age out of their parents’ insurance plans, while others may elect employer coverage or experience a challenging life circumstance that leaves them without coverage. Many resources are available for YAs to enhance their knowledge of insurance-related terms and options through JDRF, the College Diabetes Network, ADA, and Beyond Type 1 (78–81). HCPs can help by initiating a discussion about how health insurance works before any potential insurance changes. One way to do this may be to ask YAs whether they receive their diabetes supplies through pharmacy benefits or durable medical equipment coverage, and if they are unsure, suggest a treatment goal to learn about their specific plan.

Finally, HCPs should not discount opportunities for YAs to learn from their peers. Studies suggest that peers can offer substantial education that may not be effectively addressed by an HCP. Peers with diabetes are able to speak from experience about what worked or did not work for them, presenting real-life application to those seeking answers (77). Peers may also be able to tackle uncomfortable topics that patients are embarrassed or unwilling to discuss with HCPs, such as sexual dysfunction (66). To avoid potential Health Insurance Portability and Accountability Act conflicts and reduce the risk of misinformation, it may be safest to refer YAs with diabetes to online resources such as those offered on ADA or JDRF platforms, where real people with diabetes may post personal experiences or education that has the benefit of being vetted by diabetes care professionals.

Recognize the Emotional Side of Diabetes

All HCPs must recognize the emotional toll associated with diabetes and adjust their treatment approaches accordingly. It has been suggested that gaps in care may be related to HCPs’ failure to meet the perceived needs and preferences of YA patients (82), particularly the need to consider the emotional impact of diabetes. Multiple studies have suggested that YAs seek HCPs who have an engaging and approachable interaction style, understand the emotional burden of diabetes, and collaborate with them to negotiate diabetes care routines and goals (4,83–85). YAs who perceive a lack of HCP support for their emotional needs are more likely to be dissatisfied with their care and experience negative emotions (86). However, in a vicious cycle, YAs may also feel uncomfortable discussing

any negative emotions with a new adult HCP if they lack adequate rapport with that person, perceive limited time during appointments, or worry that their emotional struggles will not be validated (4).

Nonetheless, depression, anxiety, distress, and isolation are all negative emotions that can begin or worsen during stressful times. Thus, HCPs should ask about negative emotions and encourage YAs to be open about their struggles. This, in turn, may help build trust in the patient-provider relationship and support collaboration in negotiating diabetes care routines and goals. Additionally, it may help for HCPs to refer and encourage their YA patients to meet with mental health professionals as a necessary part of standard care for diabetes (87).

Build a Therapeutic Partnership

The power of a therapeutic partnership with one's HCP is important and applicable to all ages. The patient-provider relationship is key to building trust and maintaining engagement in care across a variety of disciplines. Below, we list some ways to foster a therapeutic partnership with YAs with diabetes.

- **Prioritize their concerns.** With the many demands suddenly placed on them, it is not surprising that YAs may not make diabetes care their first priority. This situation can be difficult for HCPs, who must prioritize diabetes care. Try to use visits to focus on what is important to the YA first, regardless of whether it is related to diabetes. By discussing diabetes as one, but not the only, priority, HCPs can help YAs feel heard while modeling how diabetes could be viewed as an integrated part of life instead of an added burden.
- **Validate their difficulties.** Transitions can be particularly difficult when multiple transitions happen at once. Although "validation" is a term often discussed in health care, it may not be as easy to apply in practice if HCPs and patients have different priorities for the visit. It is important to recognize that YAs' difficulties are just that: their own difficulties, ones that they must manage with their own internal and external resources that may be unknown to HCPs. Validating that circumstances are difficult without judgment, unsolicited advice, or the contradictory add-on "But you should ..." demonstrates respect.
- **Shift from advising to empowering.** An overarching fact of diabetes care, regardless of type, is that the vast majority of care is performed by the individual with diabetes and not the HCP. Anderson and Funnell (88) describe an empowerment approach by highlighting the difference between trying to persuade individuals to follow recommendations versus helping them identify and create their

own realistic goals for diabetes care. It is important for HCPs to not project their own goals for treatment onto YAs, as YAs may be more able to follow through with plans they feel are realistic and in which they feel invested.

- **Eliminate the concept of "failure."** Diabetes is known to put a substantial amount of responsibility directly on the patient, with inconvenient and at times dangerous consequences. It is important to show YAs that HCPs recognize the undue burden put on them. Try to adopt the mindset that an unsuccessful treatment plan means the plan was not the right fit for the person, not that the person was a failure. HCPs and patients should collaborate to find treatment plans that will fit the motivations, lifestyle, and capabilities of the person.
- **Offer concrete suggestions.** A specific, short-term goal or task (e.g., "try to bolus for dinner every night for the next 2 weeks") may be easier to work on than a broad, immeasurable goal (e.g., "bring your A1C down"). Collaborating with YAs to create their own goals may increase their chances of success because they know their capabilities best. Furthermore, goal suggestions from HCPs should be focused on the future. By avoiding a focus on what not to do or judging what has already been done, people may feel more motivated to engage with diabetes in terms of what they can do moving forward.
- **Instill hope.** It can be difficult to see any positives or even neutrality in diabetes, particularly during challenging times. It may be useful for HCPs to focus on the temporary nature of both diabetes-related and developmentally specific challenges, offering some hope that things will improve with time and effort.
- **Normalize meeting with mental and behavioral health clinicians.** If stigma is a concern, it may be helpful to suggest that mental health is part of a full team approach, as diabetes affects patients' physical as well as emotional well-being. Focus on the benefits of meeting with mental health clinicians instead of presenting it as a needed treatment for a "problem."
- **Encourage patients to ask for support.** Encourage YAs with diabetes to tell others in their lives what they need (e.g., what would be helpful for them to hear or what reminders would be beneficial). Help them see that perhaps the most effective way to get the "right" support is to ask for it.

Conclusion

To best treat the vulnerable YA population, it is imperative for HCPs to understand the competing developmental, social,

and emotional demands of young adulthood and how they complicate diabetes care. Future efforts should focus on addressing the gaps in care and tailoring health care interventions to the complex needs of this developmental stage. Through developmentally appropriate education and strong patient-provider relationships, diabetes clinicians have the opportunity to improve outcomes, reduce disparities, and positively affect the health trajectory of YAs living with diabetes.

ACKNOWLEDGMENTS

K.W. is supported by National Institutes of Health (NIH) training grant T32DK007260. M.L.T. is supported by NIH grant K23DK119470. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.

DUALITY OF INTEREST

P.V.C. and K.W. have consulted for the College Diabetes Network. No other potential conflicts of interest relevant to this article were reported.

AUTHOR CONTRIBUTIONS

P.V.C. conceptualized the initial topic. All three authors jointly researched the data, wrote, and edited the manuscript. P.V.C. is the guarantor of this work and takes responsibility for the integrity of the data and ideas presented and the accuracy of the review.

PRIOR PRESENTATION

Portions of this work were previously presented at the American Diabetes Association's virtual 80th Scientific Sessions, 12–16 June 2020.

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