Diabetes Information Technology & WebWatch

Short User Comments ('Sound Bites') Regarding Usage of AIDA v4—*http://www.2aida.org*—An Interactive Educational Diabetes Simulator

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This "Diabetes Information Technology & WebWatch" column continues the diabetes simulation theme from previous issues and overviews various user experience with the AIDA v4 interactive educational freeware diabetes simulator. [1] AIDA v4 is a diabetes computer program which permits the interactive simulation of plasma insulin and blood glucose (BG) profiles for educational, demonstration, and self-learning purposes. It has been made freely available, without charge, via the Web as a noncommercial contribution to continuing diabetes education. Since its Internet launch in 1996 over 55,000 visits have been logged at the AIDA Web site—*http://www.2aida.org*—and over 17,200 copies of the program have been downloaded, free of charge. While these statistics may appear impressive, they do not tell the personal story of how people have been making use of the software, and what they actually think about it. In this respect this column documents some of the independent user comments about the program sent in spontaneously via electronic mail (email) by patients with diabetes and their relatives, as well as by healthcare professionals. Comments posted to diabetes newsgroups and list servers, as well as a selection of those which have been found at other, linked diabetes Web sites are also highlighted.

COMMENTS FROM PATIENTS WITH DIABETES AND THEIR RELATIVES

From San Francisco, California: "The beauty of AIDA is that it is easy to use for people with type 1 diabetes. . . . This tool permits people with diabetes the ability to easily obtain a new form of feedback that helps us to better manage our disease."

From Kent, UK: "I found AIDA to be quite an interesting `toy' and it has helped me quite a lot in understanding diabetes as I have just begun taking insulin shots. I have of course used the program for information purposes only and am following my specialist's instructions in actually managing my diabetes."

From Liberty, South Carolina: "AIDA will be great for newly diagnosed diabetics to help them understand the actual usage of insulin and how the stuff works."

From Lancashire, UK: "I have downloaded AIDA from the Internet with great pleasure. I have found the material of great interest and can see this as a very useful tool which I will recommend to diabetic friends and others associated in the field."

From Egypt: "I think your software should be quite helpful for type I diabetics using insulin injections since it can explain to the patient some of the high and low glucoses, and help him manage it better."

From Manchester, UK: "I've been playing with AIDA and think it's great as a learning tool."

The husband of a diabetic patient from Australia: "My wife is about 30 and had type one diabetes since about 18 months. I have found AIDA a most useful piece of software for myself. Brilliant piece of work. I am extremely appreciative."

The husband of a diabetic patient from London, UK: "I am a public health engineer who has spent a lot of time with mathematical models of hydrological systems (rainfall, runoff, flooding, etc). I am married to a diabetic so I appreciate very much what has gone into the development of this system; both why it is useful, why it makes sense to develop such a model, and the work that goes into it. . . . I was about to have a go at drafting a very crude one myself when I realized 'No, somebody must have done this before' and of course you have—so I am very appreciative!"

The father of a teenager with type 1 diabetes from Florida (sent of his own volition to some US TV stations): "I am the parent of a juvenile diabetic of 8 years. My son, Tim, is completing high school this year with the class of 2000. My wife and I, with the support of his doctors and our community, have been able to help our son reach this goal without him having any major health setbacks. I would like to ask you to help us to educate diabetics, parents of diabetics and the community by announcing a Web site (*http://www.2aida.org*) which offers free software for diabetics and health professionals. The importance of understanding the relationship between food, exercise, and the interaction of insulin is very important in the day-to-day existence of a diabetic, and as a parent of a diabetic my motivation is simple. That is to help make information available for understanding diabetes which leads to good health for diabetics. Please understand this software is free but not widely known about and parents of diabetic children could benefit greatly by having this free learning tool at their disposal."

While these short comments are clearly from interested and motivated patients and their relatives, it is informative to see how positive they are about the AIDA software. However, it is equally illuminating to see how healthcare professionals have also found the software of interest/use.

COMMENTS FROM HEALTHCARE PROFESSIONALS

A certified diabetes educator from the USA: "I think AIDA could be a valuable service to Diabetes Educators. I would like to be able to put patients into these situations and simulate outcomes."

A Professor from Utrecht, Holland: "I am very impressed by your AIDA program and would like to use it for one of our courses as a demonstration tool."

A nurse educator from Hamilton, UK: "Normally I use AIDA with pre-registration nursing students who get a clearer idea of glucose profiles and the effects of diet and insulin. I have pointed some of our diabetic students and some diabetic liaison nurses in its direction as well. I am completing my third year of an MA in Open and Distance Education and one of the important concepts we have studied is interaction in multimedia—AIDA is an excellent example of this."

A diabetes nurse specialist and family nurse practitioner student: "We had never heard of AIDA. It is great! Thank you."

In addition to these spontaneous comments, received by email, it is also interesting to see what people have written about AIDA in public newsgroups on the Internet.

POSTINGS TO DIABETES NEWGROUPS

Posted on misc.health.diabetes Usenet newsgroup by a person with diabetes (giving advice to someone else): "I hope you get this reply; I don't care if you're an old man, as I am one, too.

You need better information and you can get it downloaded right into your computer. Type in AIDA and diabetes in your browser and get the AIDA.exe program. I have never seen anything like it. It could coach the most skillful diabetes educator. E-mail me for the exact address should you not be able to find AIDA."

Posted on alt.support.diabetes.kids Usenet newsgroup: "Re: AIDA freeware diabetes software. This is a very useful tool. I recommend anyone who is having or has had problems with their control to try out this software."

Posted to Lehigh Diabetic list by a person with diabetes: "I've been playing a bit with this software which simulates the body's parameters in a type 1 patient. It's very informative. You can input different amounts of different insulins at different times, with different meals at different times. It's not easy to juggle everything to get excellent control. This seems to represent the practical real-life situation. Putting in Bernstein's low carbohydrate recommendations goes a long way to help with getting the model in good control. This too agrees with practice. . . . The authors have lots of disclaimers which explain that the model cannot be used to determine your own dose, so consult your doctor, etc. However it looks like a great learning tool."

Posted to German diabetes Usenet newsgroup de.sci.medizin.diabetes: "Es ist ein tolles programm! (It is a great/fantastic program!)."

Posted to the misc.health.diabetes Usenet newsgroup by a patient with diabetes from The Netherlands: "I think it would be worthwhile to check out the site (*http://www.2aida.org*). I did the download and played with the simulations for hours. I suggest have a look and see for yourself."

Finally, as the AIDA diabetes simulation approach has become more widely known about, so Internet users have started setting up links from their own diabetes Web sites to the AIDA PC site (*http://www.2aida.org*). It has been informative to read what they write with some of these links.

DIABETES WEB SITE LINKS

"AIDA (*http://www.2aida.org*). This educational tool, designed for teaching and demonstration purposes, is available for free. . . . It contains a simple model of glucose–insulin interaction in a typical insulin-dependent diabetic patient. Interested students, healthcare workers, and patients can experiment with dosages and dietary adjustments to produce an 'educated guess' as to what an adjustment might mean to an imaginary patient. AIDA consists of 40 case studies, with suggestions on correcting some of the problems generated by insulin and dietary changes. Practice your insulin adjustment skills on AIDA, the educational simulator for insulin dosage and dietary adjustment."

"AIDA is an interesting free software program (DOS) that simulates the glycemic effects of carbohydrates and insulin. A tad complicated, but a good training tool for medical students, interns, residents, and people who want a better understanding."

"AIDA—a diabetes simulator. You play with fictional people's insulin doses and diets and see what happens to their blood sugar and insulin levels throughout the day. This is fascinating and very thorough. It describes itself as a 'toy' but is very educating nonetheless."

"AIDA v4.0. Very interesting simulator for learning about insulin therapy and dietary adjustment in diabetes. Comes with lots of case scenarios to use as a starting point. Seems to run well from DOS prompt in Windows '95/'98. Be sure to see their Web site (*http://www.2aida.org*)."

DISCUSSION

These users all clearly derived benefit from experimenting with the simulator. Interestingly their comments mirror those of independent healthcare professionals, and patients and their rel-

atives, which can be found elsewhere in the literature[2,3] as well as on the Web (at: *http://www.2aida.org/reviews*). However, while intuitively the benefits of such an interactive educational diabetes simulation approach may seem self-evident, it is acknowledged that formal evaluation studies are still required, as for any other medical intervention, to demonstrate a definite clinical utility for the use of such software.[4] Nevertheless, a wide range of users seem to have identified AIDA as an accessible source of information about glucose–insulin interaction, and a useful supporting method for diabetes education. Taken together with the previous reports of user experience,[2–4] collectively these comments highlight the potential for empowerment that some people feel can result from use of the program. Given this, it is suggested that the experience with this approach has been sufficiently encouraging to warrant formal, randomised controlled clinical studies to identify the actual clinical role for such interactive educational diabetes simulations.

SYSTEM AVAILABILITY

The AIDA diabetes simulation software continues to be developed and upgraded. The latest, new release of AIDA (v4.3) can be downloaded,without charge, from *http://www.2aida.org* on the Internet. The program runs on IBM PC or compatible 80386 / 80486 / Pentium based machines and requires approximately 3 Mb of hard disk storage space. The software can also be used on Apple Macintosh computers running PC emulators such as Virtual PC or SoftWindows. People who wish to be automatically informed about future updates and enhancements to the AIDA diabetes software range can subscribe (for free) to the AIDA simulator announcement list by sending a blank email note to: *subscribe@2aida.org*

FURTHER TOPICS

If you would like to suggest further topics or Web sites for future "Diabetes Information Technology & WebWatch" columns, please email information with a brief description of the site/ suggestion to Dr. E.D. Lehmann: *info-www@2aida.org* (please write Diabetes WebWatch in the subject line). You can also fax information to: (503) 218-0828, quoting "Diabetes Information Technology & WebWatch".

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