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Melissa Grunlan

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DIABETES CONTINUED

a day to monitor sugar levels. They must always be aware of their blood sugar, because if it gets too low they can become light-headed, shaky and may even risk a coma or death.

The finger-prick method has several disadvantages compared to the device Cote and his team are developing.

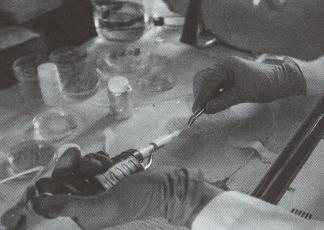
"When you prick your finger, you open it up for infection, and quite frankly it's embarrassing for some people to pull out their meter when they have to monitor their sugar, say out at a restaurant," Cote said. .

The other way blood sugar is monitored is called continuous glucose monitoring, during which a patient will stick the needle of a device into his or her stomach area. This device sends data to a meter that provides constant glucose levels, but it has several downsides.

"It is indwelling," Cote said. "It is sticking out of the skin just like an insulin pump does and it is very uncomfortable. Also it must be calibrated against the finger prick device once a day. These devices must be pulled out and switched every three to seven days."

Cote and his team aim to fix these problems by implementing a small device the size of a rice grain underneath the skin. Once it is implemented, doctors allow the skin to heal over it and glucose can be easily and noninvasively monitored for at least three months to a vear before it needs replacing. Users must simply shine a fluorescent light from a watch or other device to get a reading.

Andrea Locke, a doctoral student in Cote's lab, said the lab works with the chemistry that uses glucose to produce fluorescence while Grunlan's lab works



Allison Bradshaw

on the biocompatible membrane that will hold the assay, or the molecule that interacts with the glucose to determine what color the device will show.

The device uses two fluorescent dyes one is tied to a protein that binds to glucose, and the other is tied to a sugar that competes for the binding site on the

Although the process sounds complicated, it is actually quite simple, Locke

"When no glucose is in the blood, these dyes will be in close proximity to each other and the second dye will give off fluorescence," Locke said. 'But when there is more glucose in the bloodstream, the distance between the dyes increases and the first dye fluoresces intensely while the second is minimized.

The project is advancing, but it still has some obstacles to overcome. Locke said while the assay performs well in a free solution, it has trouble when placed in the capsule the team hopes will eventually hold it. Cote said another issue is determining how long the device can remain in the body before the chemistry on which it is based stops working.

The biocompatibility, or how well the body accepts the device, is the final hurdle.

"The body does one of three things when it is injected with something," Cote said. "The first thing the body will try is to push the foreign object out, like a splinter. If the body can't push it out it tries to eat it up, and dispose of it. If the body can't do either of these, it tries to put a capsule around it to protect the rest of the body."

Any of these would render the device useless, so Grunlan's lab is designing a material that shrinks and swells to combat the encapsulation.

The implants still need to go through several phases of human and animal testing that will take several more years before it can start being used clinically.

TENNIS CONTINUED

Just when A&M felt it could start to get comfortable, freshman Jordi Arconada fell 5-7, 5-7 to his opponent on court six, making the score 3-2 in favor of the Aggies. After Jordi was eliminated, only courts one and two remained in play. A&M just had to win one of two while Georgia would need wins on both courts to secure

Shane Vinsant, playing at line two, won his first set, 6-4, and went on to drop his second, 6-7, which led to a decisive third set. Jeremy Efferding at line one also was forced into a third set as his first two finished, 6-7, 6-1 respectively.

When things started to heat up in the third sets, both Aggies seemed to have the momentum slipping from their grasp. Right as Vinsant and Efferding were down 3-5 and 4-5 respectively in the third set, the match was postponed due to inclement weather.

Upon returning from the break, neither player lost a single game on their way to closing out the match and

capturing the team's second straight SEC Championship.

Efferding clinched the match for A&M on court one, 6-7, 6-1, 7-5. Vinsant's match remained unfinished. However, he held the advantage 6-5 when the match was called. Efferding, in addition to clinching the championship for the Aggies, was named MVP of the SEC tournament.

"It feels great, you know, just a lot of hard work paying off and it's a real honor to be the MVP but I can't take that away from the whole team," Efferding said. "Anyone could have been out there in that position and I know Arthur, AJ, Jordi, Harry and Shane have been rising up to the occasion and playing great tennis and everyone has had their opportunity to shine here and everyone has been doing great. I feel like everyone is an MVP on our team."

Moving forward, A&M will prepare for the NCAA tournament in which it projects as a top-four seed. The tournament will begin May 9. The NCAA bracket is set. to be announced at 5:30 p.m. April 28.

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What are the facts?

Bloodthirsty violence wreaked by Islamic terror groups in Syria, Iraq, Egypt, Yemen, Libya and Tunisia has created epic instability in the Middle East. This regional jihad is being waged by the Islamic State, al Qaeda affiliates, al Nusra Front, Hizbollah, Hamas, Houthi rebels and, most prominently, Iran.

Indeed, the jihadis are capturing more Middle East territory daily. The Islamic State continues to seize A Palestinian state forced upon the world today would most

ground in Syria and Iraq and threatens next to attack Israel's neighbor Jordan. The Houthis today control three certainly turn into a nightmare. major cities in Yemen, and al Qaeda in the Arabian

Peninsula is making gains in other parts of the country. The greatest threat, however, comes from Iran, which through its terrorist proxies now exerts effective control over four Arab capitals: Baghdad, Iraq; Damascus, Syria; Beirut, Lebanon; and Sana'a, Yemen. This leaves Israel, the Middle East's only democracy

and bastion of Western freedoms, almost encircled by forces of radical Islam-Hizbollah and Iran on its doorstep to the north in Lebanon and Syria; the Islamic State in Syria and Egypt's Sinai Peninsula; and Hamas to the south in Gaza. Iran, of course, threatens weekly to annihilate the Jewish state-and it is steadily, secretly building the nuclear capability to back its bluster.

Adding to this regional volatility, the Palestinians' two main political parties, Fatah in the West Bank and the Islamic terror group Hamas in Gaza, are locked in internecine strife. Palestinian President Mahmoud Abbas's government has no control over Gaza's 1.9 million Arabs. The internal Palestinian conflict has become so bitter that President Abbas recently called on Arab nations to launch military attacks against Hamas.

But Palestinians' problems run far deeper. Their economy is in shambles: Without nearly \$1 billion annually in international aid, including \$400 million from the U.S., it would collapse. Palestinian civil

society in the West Bank is notoriously rife with corruption. Political order is also crumbling: No Palestinian elections have been held since 2006. The 80-year-old Abbas is serving his tenth year of a five-year term, and his Fatah party has no provisions for a successor. What's more, security in the West Bank is critically dependent on support from Israeli Defense Forces. Without it, experts predict a takeover by

Hamas, which did the same in Gaza in 2006. A Hamas coup would leave Israel a tiny island engulfed in a sea of Islamist terror

Why don't the Palestinians already have a state? The Arabs were offered a state next

to Israel by the United Nations in 1948, but turned it down. After Israel's defeat of three invading Arab armies in 1967, the Jewish state offered to negotiate land for peace, but again the Arabs refused. As recently as 2001 and 2008, under the auspices of the United States, Israel offered the Palestinians up to 95 percent of the West Bank and Gaza, plus a capital in East Jerusalem, but again the Arabs walked away from statehood and have for more than 60 years stubbornly refused to recognize the Jewish state.

Today the situation in the Middle East has changed dramatically in two ways. First, Israel and moderate Arab nations are threatened as never before by radical Islamists obsessed with conquest. Second, Palestinian institutions have reached new lows of dependence and disorganization, nearing total collapse. Iran-supported Hamas is well armed and could seize control of the West Bank at any time

While some world leaders have proposed a deadline for completion of peace negotiations between Israel and the Palestinians, leading to a Palestinian state within a few years, this idea does not account for today's horrific new reality in the Middle East. Indeed, a Palestinian state that is forced upon Israel and the rest of the world would most certainly turn into a nightmare.

While Israel, the United States and other nations have worked in good faith to create a Palestinian state, the Palestinians themselves have consistently rejected requirements that would ensure Israel's security and survival. Today, explosive threats from radical Islamist terror groups in the Middle East, especially Iran, as well as the disintegration of social, economic and political order among the Palestinians, make a Palestinian state unrealistic. Rather, world leaders need to focus on stabilizing the region—especially Palestinian society—and put Palestinian statehood temporarily on hold.

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Facts and Logic About the Middle East

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