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BACCALAUREAT GENERAL ET TECHNOLOGIQUE

EPREUVE SPECIFIQUE MENTION

« SECTION EUROPEENNE OU DE LANGUE ORIENTALE »

Binôme : Anglais / SVT

**Thème 5 – Corps humain et santé
5.A. La cellule musculaire et la glycémie**

After testing positive for SARS-CoV-2, Mr. B has just learned that he is also diabetic. He doesn't understand.

You are a doctor: using your knowledge and this article, provide reasoned answers to this patient's questions.

Unraveling the Complex Link between COVID and Diabetes

When COVID-19 began, doctors noticed something: patients who had no history of diabetes sometimes developed severe diabetic symptoms while battling COVID, and some remained diabetic after COVID resolved.

Can the pandemic virus, SARS-CoV-2, directly trigger diabetes?

Paul Zimmet (professor of diabetes) and other experts point to at least some explanations for the sudden appearance of diabetic symptoms in patients with COVID:

1-The virus may directly attack insulin-producing beta cells in the pancreas. A study conducted last year at Cornell University showed that insulin-producing cells cultured in a lab express ACE2 receptors—the key doorway through which SARS-CoV-2 enters human cells—and that the virus can invade these cells. A 2010 study also found ACE2 on beta cells and suggested that the earlier SARS-CoV virus could use the receptors to enter and destroy those cells. But another study searched for expression of the ACE2 protein in beta cells and found only negligible amounts.

2. The virus may indirectly attack insulin production. “One could envision a scenario in which the virus could affect these micro blood vessels and beta cells could die,” Powers suggests. Or it could infect other areas of the pancreas inducing inflammation that disrupts insulin production, he adds.

3. Treating COVID with steroids raises blood sugar. The anti-viral drug Remdesevir raises insulin resistance and may therefore make hyperglycemia even worse.

Adapted from: Scientific American By Claudia Wallis on February 24, 2021

- Idées principales :

Les médecins ont remarqué que le diabète était parmi les conditions qui rendent les gens particulièrement vulnérables à la nouvelle infection mais ils ont aussi remarqué que l'infection par le virus causant la pandémie semble déclencher le diabète chez certains patients.

Le virus pandémique, le SRAS-CoV-2, pourrait-il déclencher directement le diabète ?

Quelques pistes pour répondre à ces questions/

- 1- **1. Le virus peut attaquer directement les cellules bêta productrices d'insuline dans le pancréas.**
 - 2- **2. Le virus peut attaquer indirectement la production d'insuline.**
 - 3- **Traiter le SRAS-CoV avec des stéroïdes augmente la glycémie.**
- (+ pour le prof : **4- La maladie aiguë et l'inflammation causent des symptômes du diabète.**
 - **5- Le diabète pourrait ne pas être réellement tout à fait nouveau).**

Idées pour la discussion :

- La régulation de la glycémie
- Récepteurs à insuline
- Les deux types de diabète