Activity 4 – How can we better manage insulin resistance in patients?

Managing T2DM in patients

The clinical management of T2DM revolves around lifestyle modifications, such as having a healthy diet and regular exercise (exercise increases insulin sensitivity!). However, several groups of drugs can be used to treat T2DM, working in different ways to lower blood glucose. Some of their mechanisms include:

- Improving the sensitivity of cells to insulin
- Stimulating the pancreatic islets to release more insulin
- Inhibiting the production of glucose from the liver
- Inhibiting the gastric enzymes responsible for breaking down carbohydrates

Metformin is a drug most very commonly used to treat T2DM, and it makes use of a couple of the mechanisms of action mentioned above.

Insulin replacement therapy in T2DM

Insulin replacement therapy is usually used to treat T1DM, where the pancreas is unable to produce enough insulin. However, the administration of insulin may also be helpful in T2DM, to meet the higher demand for insulin that the insulin-resistant target organs place on the pancreas. Furthermore, in some T2DM patients, the high demand for insulin over time pushes the pancreas into overdrive, and leads to islet cell damage or ‘exhaustion‘, necessitating insulin replacement therapy.