Libya International Medical University

PTS BLOCK

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intradermal immunization

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define the intradermal immunization

describe the skin anatomy and function

Types of vaccines that can be given intradermally?

How vaccine ID is safe for children and infant ?

define the intradermal immunization

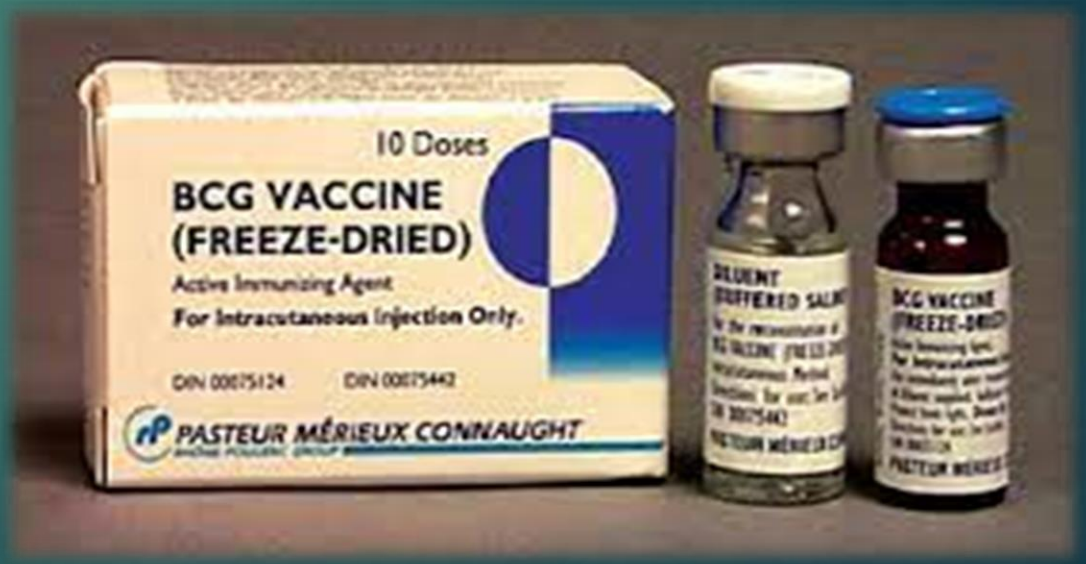
- The administration of vaccinations into the outer layers of the skin is known as intradermal vaccination. The majority of vaccines are administered intramuscularly (IM) or subcutaneously (SC). Only a few vaccines are administered via the intradermal (ID) method. To ensure safety and efficacy, this technique of vaccination distribution necessitates the use of trained health experts.

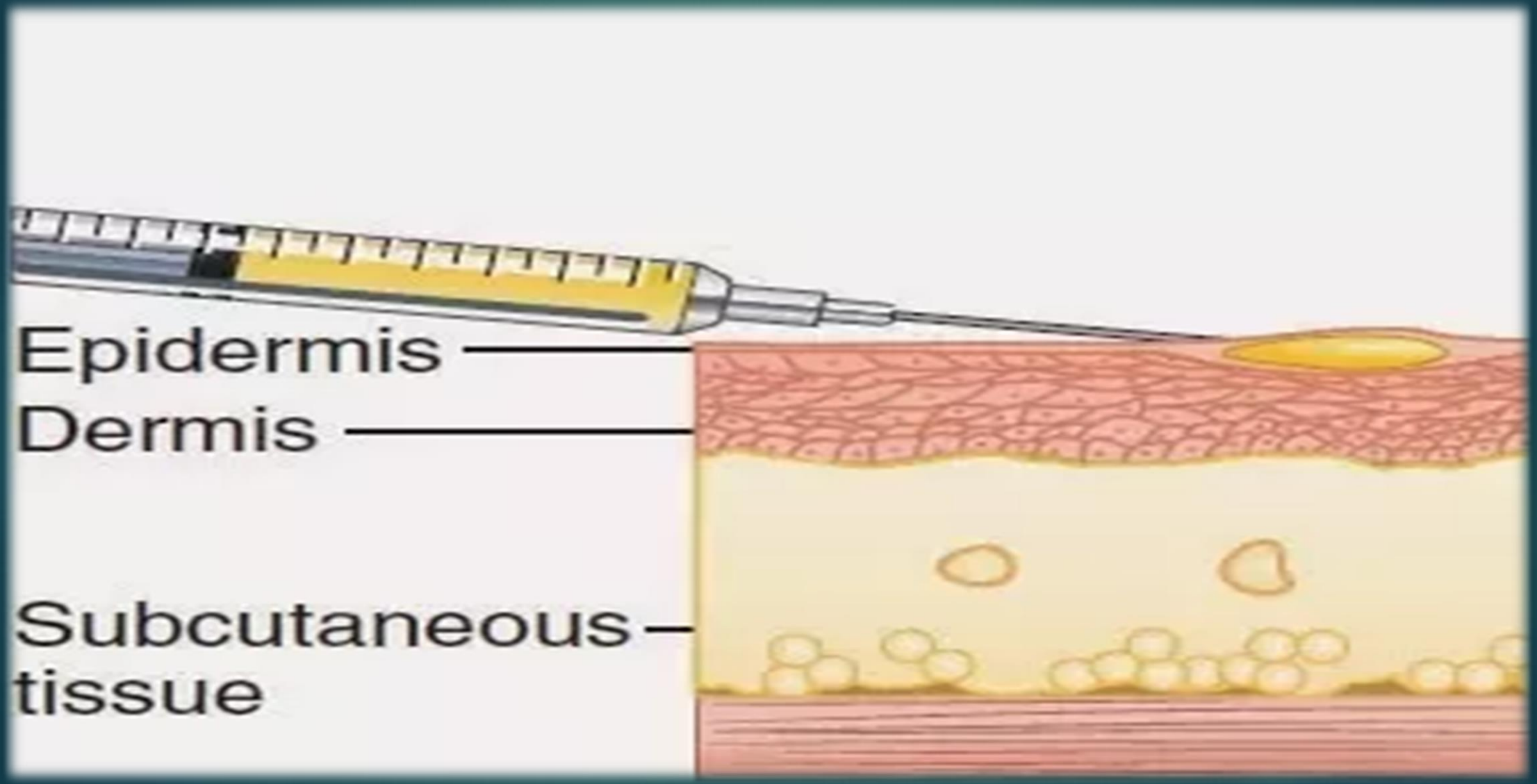
describe the skin anatomy and function

- The epidermis, dermis, and hypodermis are the three layers that make up the skin, which is a tremendously complicated organ. Each layer has a distinct anatomy and function. Many distinct cells can be found in the epidermal and dermal layers, including antigen-presenting cells (APCs), which are thought to play a key role in mediating an effective and protective immune response to certain vaccinations. Macrophages, dendritic cells, and B cells are the three main APCs. As the name implies

Types of vaccines can be given intradermally

- BCG and hepatitis B vaccines are among the ID vaccines (for non-responders). Intradermal Mantoux and Q Fever tests are also available.
- Although the IM route of hepatitis B vaccine is the most common, a tiny percentage of the population does not produce a protective immunological response to the IM course of hepatitis B immunizations. If their provider deems them a non-responder, the intradermal method is considered as an alternative [for further details, see MVEC: Hepatitis B].




Epidermis
Dermis
Subcutaneous tissue

How vaccine ID is safety for children and infant

- children ID vaccination was favorable to IM34-36 or SC37 injection with respect to immunogenicity and/or dose sparing, although subject age and antigen dose differed among the studies. Two studies showed comparable efficacy for ID vaccination, with a dose reduction of 80%34 or 60%.35 The extent of dose sparing was diminished in the study of infants,35 most likely because of a weaker increase in hemagglutination-inhibition antibody in this young population.38 Regarding the method of ID vaccination,

- the latest study used a microinjection system (Soluvia®) and Intanza® (9 µg and 15 µg)36 and found that ID influenza vaccines already licensed for adults were also efficacious in children aged 3–11 y. Further evaluation, especially for children younger than 3 years, is warranted because the efficacy of influenza vaccines is limited in this specific population.

SUMMARY

intra-dermal vaccines could be a safe method for administration and new vaccines should be developed for intradermal injections due to its efficacy and safety and should be considered and studied more on its effect as it can be a safe and secure way of administering vaccines for the population and could be a solution to many complications that arise for many other types of vaccine injections.

References

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Thanks

Do you have any questions