

Survey on intradermal vaccination among Healthcare Professionals and Researchers in the field of Oncology and Immunotherapy

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INTRODUCTION

In addition to disease-preventing prophylactic vaccines, therapeutic vaccines represent an innovative category. These vaccines expedite the immune response by targeting disease-causing agents like viruses or cancer cells. While prophylactic vaccines hold potential to prevent conditions like HPV or HepB-related cancers, therapeutic vaccines are crucial for reinforcing the body's natural defence mechanisms. They activate key immune cells like Dendritic Cells (DCs), Macrophages, and B cells (**Figure 1**), especially beneficial for individuals already diagnosed with various cancers, harnessing the immune system to identify and combat cancer cells.

Therapeutic vaccines hold promise in addressing the growing global cancer burden, expected to exceed 20 million new cases annually by 2025. These vaccines can complement traditional cancer treatments, offering a fresh strategy to bolster the body's cancer-fighting capabilities.

Intradermal vaccination, where the antigen is delivered to the skin, emerges as a preferred method for therapeutic use. The dermis, rich in immune cells like dendritic cells and with its strong vascularization, creates an ideal environment for initiating robust immune responses. This approach holds potential for triggering potent cellular immunity, a crucial factor in cancer treatment.

To gain deeper insights, a comprehensive survey was conducted in partnership with the European Association for Cancer Research (EACR) during their 2023 Member Survey. This survey aims to capture the perspectives of healthcare professionals (HCPs) and researchers in the cancer and immunotherapy field, shedding light on the potential of therapeutic vaccines to reshape cancer treatment strategies.

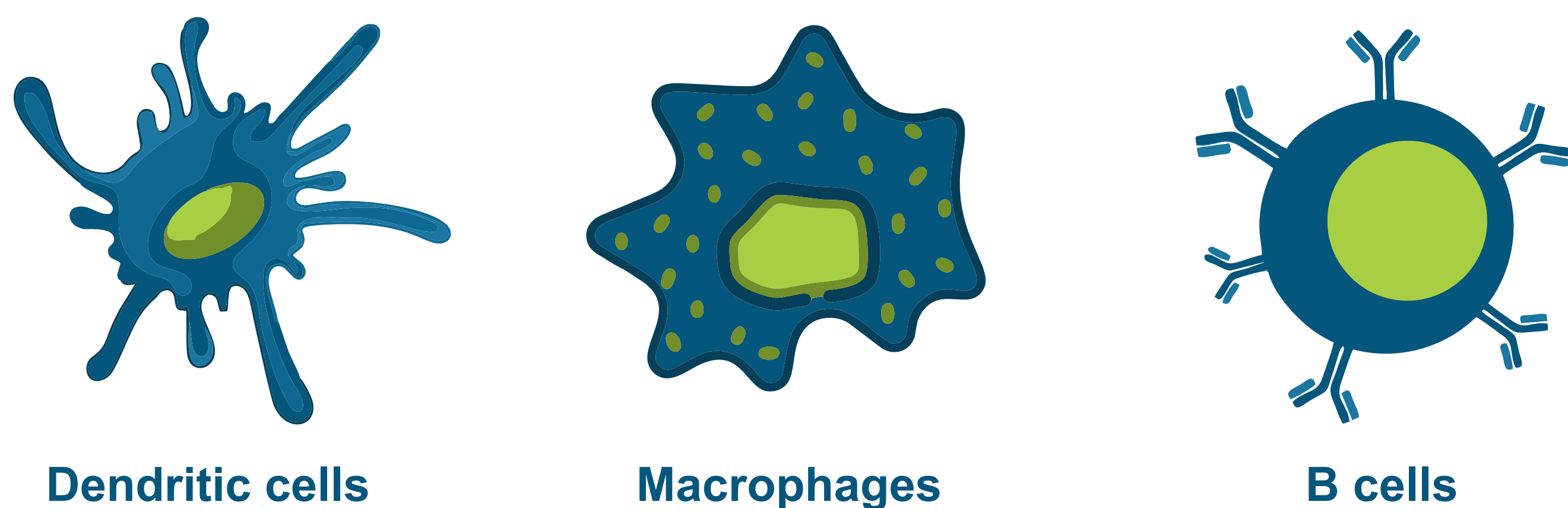


Figure 1. Antigen-presenting cells which are activated considering therapeutic vaccines and immunotherapy.

MATERIALS & METHODS

To gather information from HCPs, research scientists and academics perception on intradermal drug delivery, the expected benefits for therapeutic vaccines, and the role of drug delivery devices; a research question (**Figure 2**) was defined to obtain effective and focused answers and shared through an online survey by EACR with its members, having a background in basic, translational, or clinical research. The collection of data was conducted by the EACR. IDEVAX received the results of the answers to the questions in an xls sheet along with some anonymous information covering the background of the participants. General analysis of the data was performed by EACR. IDEVAX conducted further analysis to search for patterns and trends.

2023 EACR Member Survey

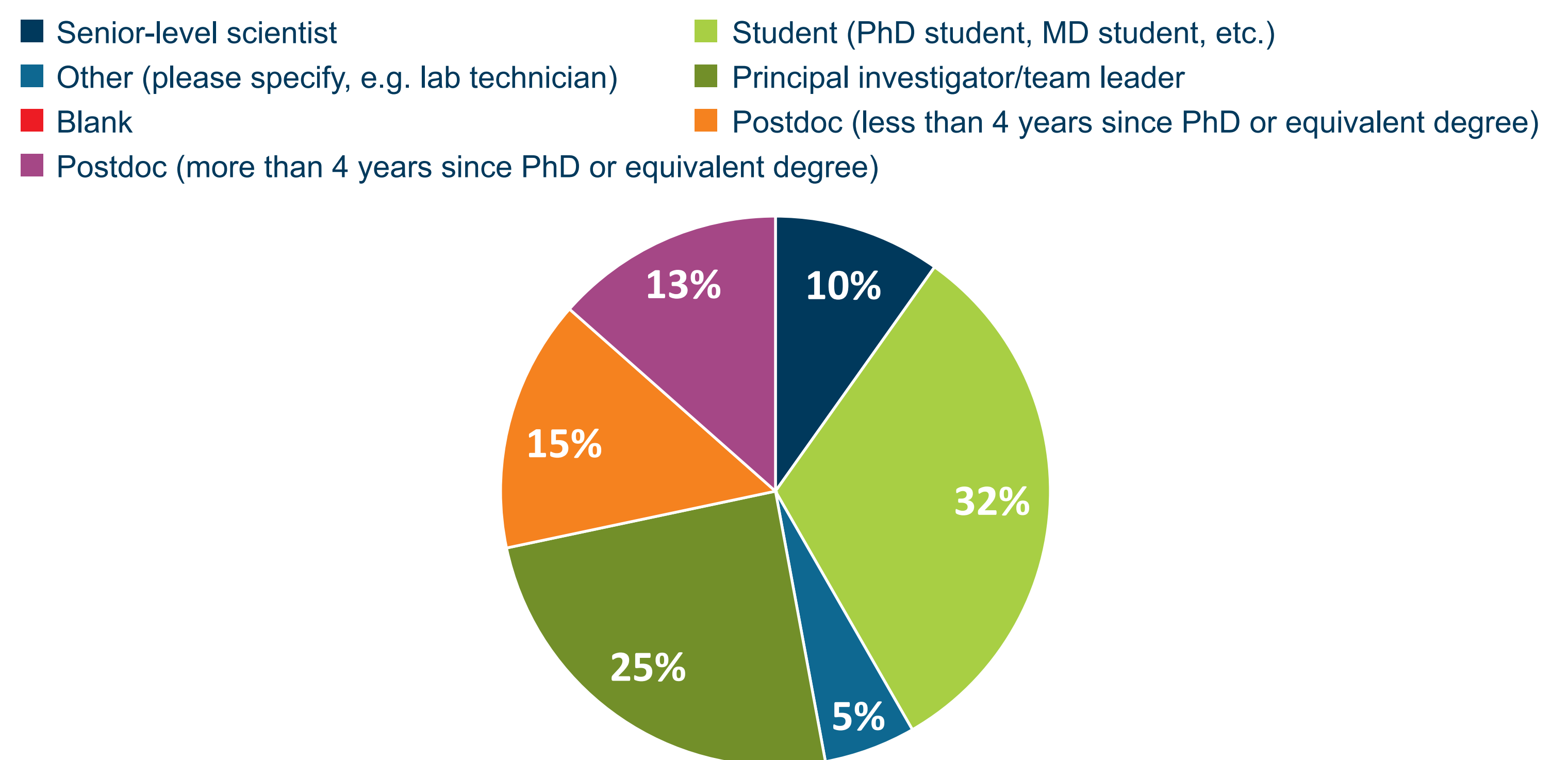
Q22. When considering therapeutic vaccines delivered through skin, which of the following benefits do you find the most important for drug delivery devices?

Figure 2. Survey question from IDEVAX in 2023 EACR Member Survey.

RESULTS & DISCUSSION

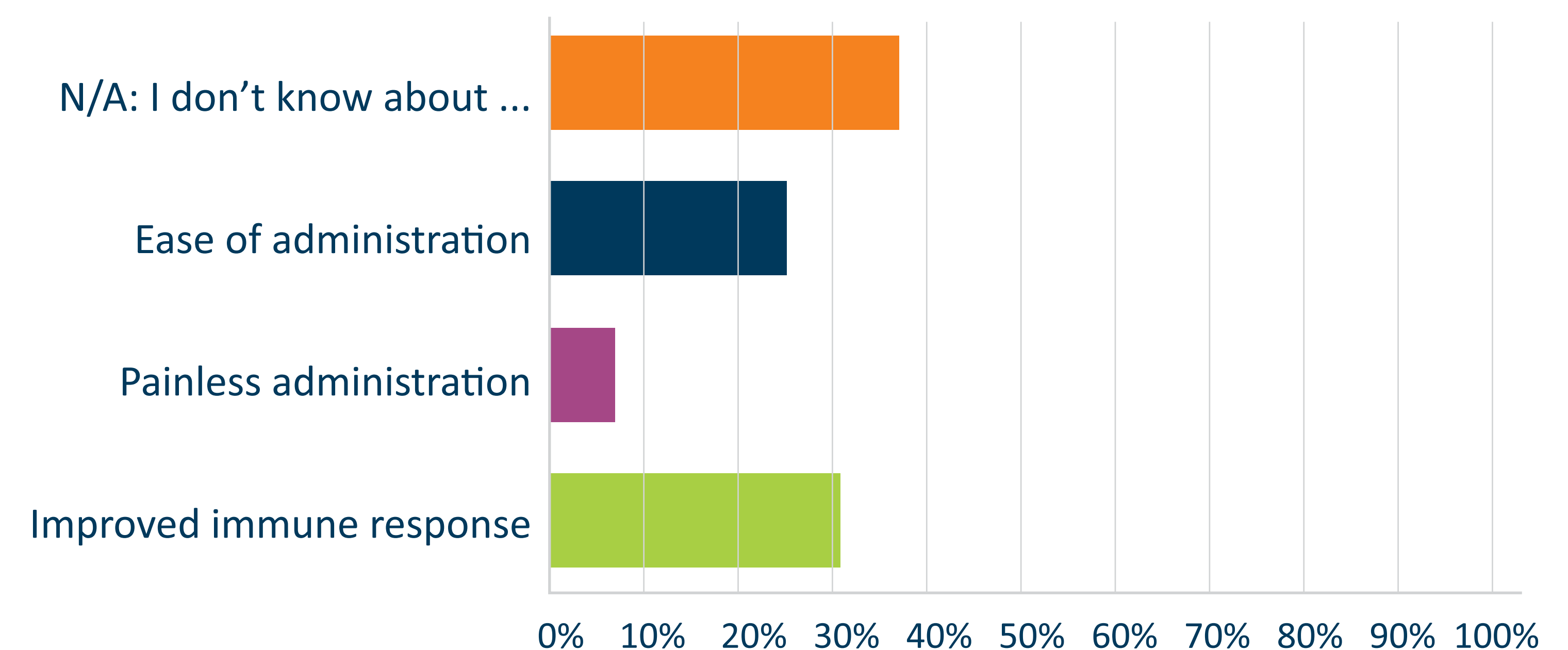
Members of the EACR who participated in the survey were principal investigators, PhD students, Postdoctoral researchers, and senior level scientists. The survey was shared with 1,161 members, of which 968 members answered IDEVAX question while 193 members skipped the question (**Graph 1**). IDEVAX considered how the survey results fit into the broader literature on the topic of benefits offered by intradermal therapeutic vaccination through medical devices and identified areas for future research.

BACKGROUND OF EACR MEMBERS WHO PARTICIPATED IN ANSWERING IDEVAX QUESTION



Graph 1. Educational background for EACR members who answered IDEVAX survey question.

EACR members could select 1 answer to the research question: (1) N/A: I don't know; (2) Ease of administration; (3) Painless administration; (4) Improved Immune response. Results are shown in **Graph 2**.



ANSWER CHOICES	RESPONSES	
N/A: I don't know about therapeutic vaccines delivered through skin	37,09%	359
Ease of administration	25.10%	243
Painless administration	6.82%	66
Improved immune response	30.99%	300
TOTAL		968

Graph 2. Responses rate for the answer choices.

CONCLUSION

Almost one-third of respondents indicated that “improved immune response” generated by intradermal drug delivery is the most important benefit. A quarter of respondents mentioned “Ease of use” as the most important benefit. The fact that 37.09% respondents said they don't know about therapeutic vaccines delivered through the skin implies a need for further enlightenment and awareness creation on this topic.

ACKNOWLEDGEMENT

We'd like to thank the EACR members for their participation in the online survey.