

# *How to get involved in clinical research: helpful tips*

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*Research is very competitive but vital in medical training at all levels and disciplines. Given the evidence-based practice, people are reinforced to adopt a constant change attitude and critically appraise all the literature to make the best medical decisions. Nonetheless, the motivation*

*to generate new knowledge and scientific research is relegated to small groups due to multiple factors. Such as the lack of research education from early stages in medical training, the absence of early results, and the lack of mentors willing to sponsor a person who wants to begin this way. This mini review would like to highlight the importance of pursuing a medical research career; therefore, we recommend beginning in the long run.*

**Key Words:** research, education, mentors, first steps

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## Introduction

Health research is a collaborative task, and its results are the fruit of multiple individuals and disciplines' continuous and sustained effort over time.<sup>1</sup> Research is constantly subjected to changes and revalidation in the face of new evidence; therefore, no research project ends. The results are a sample of what, until that moment, might be considered the truth, but it will change over time.<sup>2</sup> Consequently, what today is considered ideal for a medical decision, will be replaced in the future.

Physicians want to decide based on the best and newest available evidence in the current medical practice. However, multiple factors prevent this practice, such as plagiarism, low powered results, lack of integrity research, tons of published literature, among others. Therefore, uncertainty and frustration increase worldwide, and people effort to cover these flaws.

According to the facts, medical research training is of great importance, a constant demand of being updated, and this is an undeniable reality for everyone. Consequently, it is essential to promote and strengthen medical research from the most basic levels, from the academy to the higher formal education.<sup>2</sup> Although we know that obstacles and doubts may arise on this path, we aimed to highlight the importance of pursuing a medical research career and recommend how to begin in this long run.

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## Where to begin

The first thing to do is find an area of interest in the clinical discipline and focus on it. Delving into a topic is one of the main pillars for generating research ideas, especially when surrounded by an enjoyable environment. It encourages academic discussion between colleagues and improves the research idea.<sup>3</sup> Multiple strategies might help achieve this objective, such as talking to professors, attending conferences, webinars, or medical congresses on a particular interest. The previous will support the early researcher or the student focus on a clinical affinity area.

Medical research is not restricted to the clinical aspects. However, it gives freedom to explore different issues that complement information and help solve the research questions, such as basic sciences, epidemiology, public health, and other areas. The previous might be seen as an opportunity to explore new areas of knowledge and acquire new skills outside of the routine practice of the specialty.

## Allocate specific time to research

Starting a wonderful life in research can be frustrating. The results are not early seen. Therefore, it usually discourages many early researchers, leading to withdrawal projects; also, not accomplishing all goals, including publication and social communication of results. Accordingly, recognizing this critical issue, it is necessary to carry out continuous work, guaranteeing the project's culmination in a specific time.<sup>3</sup> Additionally, researchers must understand that publication will be shown after a few months or years. It must pass over multiple peer-review and rejections. Then, it will be finally accepted in a recognized journal.

It is not a mystery that it is challenging to dedicate exclusively to medical research in low-income countries and even more when it is outside an academic environment. It is necessary to allocate a specific time to ensure continuous growth and complete our research.<sup>2</sup>

## Choose/find a mentor

Choosing an ideal mentor is a critical step when starting research. Having experienced personal support is invaluable because it makes it easier to acquire new skills, overcome barriers, and finally obtain the research project's goals. Nonetheless, it is not mandatory but recommended.<sup>4,5</sup>

Multiple Universities such as the College London Medical School have created mentorship programs

to match the student with a faculty member to accompany them during their first research projects. Fundamentally, choosing a mentor depends on what the student seeks in that person and vice-versa. Mentorship is way beyond only a director, professor, or tutor; a mentor will become a life model, the person who will support new job, educational, and lifetime opportunities.<sup>4,5</sup>

## Collaborate into a research group

Research groups provide unique experiences since they greatly facilitate developing research ideas or participation of early researchers in existing projects.<sup>1</sup> Collaborating and creating national and international networks to research are essential issues to cope with when starting and continuing research ideas.<sup>3</sup>

Research collaborative groups such as CLUE working group, Global Society of Rare Genitourinary Tumors, UROGIV Research Group, among others, allow having wonderful experiences; participating in already established projects, from the beginning, multiple tasks, writing, drafting, collecting information; also, generating, and leading other projects.

Joining a research group is an excellent way to start on this path. It allows the person to learn about the process and methods from the most fundamental stages to the most detailed analysis in each project. Besides, it lets people know more wonderful people around the globe.<sup>1</sup>

Regardless of the role in the research group, it is vital to establish the tasks, duties, and authorship criteria. Regarding the last one, the international committee of medical journal editors (ICMJE) established four vital criteria to become an author:<sup>6</sup>

- Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
- Drafting the work or revising it critically for important intellectual content; AND
- Final approval of the version to be published; AND
- Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

## The writing skills

Writing medical literature is a trainable skill, and it will be acquired gradually, becoming more robust as reading and writing. Authors become familiar with the scientific language and the commonly exposed writing style in other articles.<sup>7</sup>

Original studies, such as clinical trials, systematic reviews, or analytical studies, are difficult to design and produce, especially when the researcher is a beginner, due to the strict methodology and detailed statistical analysis. Consequently, some projects should be considered when the person increases his/her skills and experience on the topic. However, thanks to the research groups, it is possible to participate in these projects, allowing the early researcher to know the whole process and to be able to generate future ideas.<sup>1</sup>

For writing manuscripts, the most recommended type is letters to the editor, opinion articles, or narrative reviews since they are relatively shorter projects with a lower complexity level. These manuscripts will let beginners obtain their first publications and start their curriculum as researchers.

## The language

Many non-English native students and physicians face a language barrier that keeps them away from research. English has been considered an essential language for spreading science in the scientific community.<sup>8</sup> However, not all people have the needed skills to understand this language: scientists and people that need to understand the investigation results. Therefore, we all need to learn to understand this language to overcome this barrier from the very beginning of our scientific life. Nevertheless, it is essential to translate the knowledge to different languages, including the local ones; it might be vital for non-English speaking people worldwide.

It is also essential for starting and even improving the scientific career that the editor reads the manuscript early in preparation. This step might teach critical writing skills and knowledge on how to submit a high-quality manuscript, avoiding grammatical, syntax, and formatting errors. All those issues may represent a reflection of the quality of the work. Accordingly, consider the first time as the only single chance to shine.

## Epidemiological, statistical, and translational science training

Students, physicians, and professors frequently fail to understand, interpret, or even apply scientific literature. Also, they often do not realize the importance and usefulness of public health (epidemiology and biostatistics) and basic science skills to improve the patient's outcomes.<sup>9</sup> Nowadays, research requires statistical understanding, clinical trial design and

execution, translational science, and other related skills to overcome the barriers in these crucial areas. All these issues are essential to all research communities to advance our field forward.

## Conclusion

Medical research is a valuable opportunity to broaden horizons and qualify health professionals. Research training must be ensured for every single student at all academic levels.

Research education is a taking-time process where some barriers and uncertainties may arise. Nevertheless, if people define to face it in the right way, it will always be gratifying at the end: rewarding the efforts, perseverance, and dedication of teamwork.

We can affirm that it is never too late to start this research career. Despite how competitive and intimidating it may seem at first, if an early researcher has a mentor or a consolidated team, it will be possible to go through this path more enjoyable and unquestionably fruitful. □

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