

Directive for a Dissertation (PhD-thesis) at the Medical University of Innsbruck



MEDIZINISCHE
UNIVERSITÄT

INNSBRUCK

For the PhD Doctor of Philosophy (Q 794 440 202)

and the PhD programs:

Genetics, Epigenetics & Genomics (GEG)

Image Guided Diagnosis and Therapy (IGDT)

Infection, Immunity & Transplantation (IIT)

Molecular and Cellular Biology of Diseases (MCBD)

Musculoskeletal Sciences (MSS)

Neurosciences (NS)

Medical Psychology (MP)

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1 Preamble

Dissertations (PhD theses) are academic theses which, unlike diploma and master's theses, demonstrate the ability of a PhD student to solve independently a scientific question or to test a scientific hypothesis (but of course under supervision and guidance). **The reviewers and readers of the thesis must be able to recognize that fact as well as the individual contribution of the PhD student** (§51, Abs. 2, Z. 13 of the Austrian University Law, UG 2002). Since results in life sciences and biomedical fields often are generated by several collaborators, which also contribute to publications, the PhD student is advised to see the PhD thesis strictly as independent scientific paper and to write it as such. Therefore, **the individual contribution of the PhD student must be made explicitly clear** (see examples later).

The content of published work (including the own published work) must be properly cited. Otherwise, the PhD student risks the thesis to be considered (self-) plagiarism. Many journals allow the use of previously published content in the PhD thesis (e.g., if they are published under the creative commons license), but certain journals demand a transfer of copyright. The contents published in such a journal can only be used for the PhD thesis, if the permission is requested by the PhD student and granted by the journal. Using such content in a PhD thesis without the permission of the journal can result in a violation of economic rights. A source for checking the rights and possibilities of an author to use/re-use published material can be found at Sherpa Romeo (<https://v2.sherpa.ac.uk/romeo/>).

Hence, the PhD student who submits the PhD thesis is responsible:

- (1) to ensure that copyright issues are not violated (has to be confirmed in the thesis submission form),
- (2) to properly cite her/his/their own work and the work of others to avoid allegations of (self-) plagiarism,
- (3) to clearly declare the personal contribution to the described work,
- (4) to ensure that the content of PhD thesis adheres to the rules of good scientific practice at the MUI described here: <https://www.i-med.ac.at/goodscientificpractice/> .

Most journals will consider submissions containing material that has previously formed part of a PhD thesis, which has been published according to the requirements of the institution awarding the qualification. The same holds true for electronic preprints. However, some journals might have different policies on prior publication, and the PhD students are advised to carefully check with the journals prior to submitting their work.

2 Before submitting the PhD thesis

The student must consider the following points before submission of the PhD thesis, ideally before writing:

- PhD students should read the entire PhD directive. It will guide the PhD students through the process of writing and submitting the PhD thesis.
- A final PhD thesis committee meeting must have taken place. The form can be found here: https://phd-school.i-med.ac.at/fileadmin/Abteilung_Lehre/2020/2020_Final-Thesis-Committee.pdf
- At the time of submission, at least one original research paper should have been published or accepted for publication in an international, peer-reviewed scientific journal with the PhD candidate as a “lead author”. The lead author is defined as sole first author, or shared first author, or (co-)corresponding author. If this is not the case, the PhD candidate and the thesis committee must explain in writing why the submission of the thesis is nevertheless justified at that time.
- Submit the final credit calculator and application for submission to the PhD office (<https://biomed-phd.i-med.ac.at/contact/>) together with the program coordinator will check it before it is forwarded to the Executive Vice President for Teaching and Study Matters (Vizekanzler für Lehre und Studienangelegenheiten) for final approval.
- According to Austrian University Law (UG 2002), § 86 Abs (4), you need to consult with your supervisor to determine if your PhD thesis should be embargoed due to patent issues. Additionally, if the journal where you plan to publish parts or all of your thesis imposes restrictions on free distribution, or allows it only after a specific period, your PhD thesis also needs to be embargoed. Both options have to be discussed in the final PhD thesis committee meeting. The form to apply for an embargo can be found here: https://phd-school.i-med.ac.at/fileadmin/Abteilung_Lehre/2020/2020_Application-to-exclude-doctoral-thesis.pdf
- For the submission of the PhD thesis this form must be used: https://phd-school.i-med.ac.at/fileadmin/Abteilung_Lehre/2020/2020_Submission_doctoral_thesis_Q794-440.pdf
- The Teaching and Study Administration at the MUI offers a **formal check of the final pdf version of the PhD thesis** prior to the submission of the printed version. This service is not mandatory and it can be used on a voluntarily basis. If students plan to use this service, the Teaching and Study Administration must be contacted well before submitting the printed version of the thesis (see chapter 10).

3 The Goal of a PhD thesis

The thesis is a detailed, written presentation of the PhD candidate's work on his/her/their research project.

The PhD candidate must provide verifiable evidence of his/her/their ability to work on a scientific problem independently and with scientific rigor. The intellectual and experimental contribution of each PhD student must be clearly described and it must be possible for the reviewers and for the readers to evaluate each contribution separately.

The PhD student must write a PhD thesis that adheres to this directive (§83 of the Austrian University Law 2002, UG 2002) and comply with the provisions of the Austrian Copyright Law BGBl No. 111/ 1936 (§80 (2) UG 2002) (as described in the preamble).

4 Format of PhD thesis

- The PhD thesis must be submitted as a bound hard cover document in DIN A4 format.
- The hard-cover should be labelled with "Dissertation" (which means PhD thesis) and the name of the author
- The spine of the cover must bear the author's name, the label "Dissertation" and the year of publication.
- It is recommended that the PhD thesis be printed single-sided. If double-sided, the appropriate paper-strength must be used to avoid ghosting; the pages must be numbered consecutively.
- For legibility reasons, the continuous text should have a line spacing of 1.5 lines, a font size of 11 pt, and an easily readable font such as Arial or Times New Roman.
- There must be a margin of 2 -2.5 cm on all four sides of each page.
- The PhD thesis must be written in English without exception.

5 The structure of the PhD thesis

The PhD thesis describes the scientific problem, the working hypothesis and the new results of the thesis research. It puts these results into perspective and provides sufficient background and methodological details to allow an in-depth review.

The number of pages of a scientific publication is not the most important quality criterion. It is more important to describe the topic precisely, correctly, and understandably in a compact form, whereby the process of independently handling the research problem is documented. Every topic should be covered as concisely and clearly as possible but as detailed as necessary. Journal articles are kept rather short due to limited space, economic reasons of the publishers, the requirements of the readers, and other similar reasons. A PhD thesis should be more extensive. The length of a typical PhD thesis

(written in Arial or Times New Roman 11, line spacing 1.5) at MUI is 70 – 100 pages. In case the thesis includes projects which are already published and which are included as pdf-files, each of these projects is an equivalent of 20-30 pages.

Each PhD thesis must contain the following sections (for a checklist see also chapter 13):

5.1 The Front page / Cover page

The Front page / Cover page has the following composition:

- logo of MUI
- title of PhD thesis
- author
- supervisor
- department / Institute
- month / year of submission

5.2 Statement of originality (not signed) / Eidesstattliche Erklärung (nicht unterschrieben)

The statement of originality must be included both in German and in English: (https://biomed-phd.i-med.ac.at/wp-content/uploads/2023/04/eidesstattliche-Erklaerung_06_04_2016.docx). It must be placed before the table of contents in the PhD thesis. The first and last name must be stated in the designated field. **The statement of originality in the PhD thesis is not signed.**

5.3 Statement on the use of Artificial Intelligence

As part of the requirements for submitting your PhD thesis, you must declare the use of Artificial Intelligence (AI) tools in your work. Therefore, you are obliged to state which parts of your PhD-thesis contain AI-modified text/graphics/code. A checklist on how to correctly use AI tools in your PhD thesis can be found in chapter 7.

Please include the following paragraph after the statement of originality:

„During writing this PhD thesis I used [*please list the used tools, e.g. ChatGPT (Version xxx), DALL:E (Version xxx), Grammarly (Version xxx), DeepL (Version xxx) etc.*], to [*explain the reason why and how you used the AI tool, e.g. correct the text grammatically, improve phrasing etc.*]. I understand that I have the full responsibility for the correctness of the content of my PhD-thesis if I used AI for the above-mentioned reasons.”

5.4 Table of contents

5.5 Key words

About 5-6 key words that capture the essence of the thesis must be provided.

5.6 List of Abbreviations

Abbreviations have to be restricted to a minimum (e.g., abbreviations which occur less than 5 times in the entire thesis should be avoided and spelled out).

5.7 Acknowledgments

The student may acknowledge her/his/their PI, PhD committee, friends and family. Funding sources, personal fellowships or grants to the student and/or PI may be acknowledged as well.

5.8 Abstract in English (max. 1 page)

An abstract is a concise summary of the thesis and must convey its goals, main results and the major conclusions.

5.9 Abstract in German (max. 1 page).

5.10 Introduction

The introduction is a key element of the thesis. As a rule of thumb: it should read like a review, leading to the topic of the thesis. From the introduction, the aims of the thesis should logically emerge, which will be finally stipulated in the "Objective of the PhD thesis".

The introduction provides sufficient background information and explains the general and the particular scientific problem.

Figures explaining the background by schematic illustrations are usually well received. They should preferably be made by the student. However, if a figure from a different source (e.g.: from a textbook or from a review) is used, the source has to be cited. In any case the PhD student must check with the publisher the policies that permit the reproduction of figures from journals, online products and books (the permission to reproduce has to be available (e.g. "Figure 2 from reference 121 reproduced with permission"). The student is advised to document and hold these permissions on his own files (e.g. a written conversation with the publisher or the description of the rules for reproduction either from the copyright transfer documents which often describe these rules or by a printout of the description from the web page of the publisher with the documented access date and link).

There is not a clear rule about the length of the introduction, but it is important that the content convinces the reviewer and the reader that the PhD student has a general and deep scientific understanding of the field.

5.11 Objective of the PhD thesis / Working hypothesis / Aims

The PhD student defines with clarity the research question that is addressed in the PhD thesis. It is restricted in length to max. 1 page.

5.12 Materials & Methods

Contains a detailed description of the experimental procedures and/or study/clinical/trial details that allow to follow the experimental design and to reproduce the findings.

In case pdf-file(s) of paper(s) are included in the results section of the PhD thesis (please see 5.12, Option 2), it is not necessary to explain the methodological details once again when they are already described in the respective papers. However, if there are more details which were not given in the original paper or the accompanying supplementary material, these descriptions must be provided pointing to the respective project.

5.13 Results / Papers

The own contributions of the student must be clearly described. This is particularly important, if results from publications with multiple authors are used, and/or if one or several of these authors were equally contributing to the published manuscript.

If the results of the thesis are already published (either on a preprint server such as bioRxiv/medRxiv, or in a peer-reviewed journal), it must be checked whether they can be used in the thesis (e.g. if they are published under creative commons (CC) license or if the publisher allows the use). It is mandatory to control the permission to reuse the data with the publisher (see also Sherpa Romeo at <https://v2.sherpa.ac.uk/romeo/>). Either way, if the student includes published data in her/his/their thesis, these results must be cited to make clear that they have been published, otherwise it might raise suspicion of self-plagiarism.

To present the results/papers, the PhD students can choose between two options:

Option 1: In this option, the projects and results of thesis are structured in chapters, similar as in one big research paper, with or without unpublished data. This option is often called a "monography". It is mandatory to include a detailed description what has been done by the student as well as by others who contributed to the work.

Option 2: In this option, the student includes at least one original research paper as a pdf file (as it has been published or has been accepted by the journal) that she/he/they has/have written as a lead author, with the option to include unpublished data. This option is often called as "cumulative thesis" and contains usually more than one project (e.g. one published paper and unpublished data OR more than one published paper and possibly also unpublished results). Therefore, the results could be organized in "Main Project 1", "Main Project 2" etc... This nomenclature fits better, since each of the main projects contains subchapters such as Introduction, Methods, Results and Discussion.

Of note: it is NOT possible to include a pdf file of a paper to which the student did not contribute as lead author. However, a short description of that part of the work and figure(s)/table(s) where the student was NOT the lead author can be added to the results section or in an optional chapter called "Additional Work"; see below.

It is mandatory to start the description of each paper with a cover page (as an example see Appendix) which contains:

- 1) the title of the published paper (provide also a title for an unpublished project),
- 2) the authors,
- 3) where the paper is published (in case of unpublished material simply state "unpublished project" or "submitted for publication" or "manuscript in preparation"),
- 4) a detailed description what has been done by the student as well as the co-authors;
- 5) a statement whether the following reprinted pdf has been published under common creative license which allows reproduction of the material or whether permission for reproduction has been granted by the publisher. Following each cover page, the pdf and a respective supplementary material file can be reprinted. Some journals/publishers do not allow to reprint the published pdf, but the final version as it has been submitted to the journal;
- 6) optionally, a brief description how the results of each paper connect to the overall goal of the thesis and how it connects with the other papers (can alternatively be placed in the discussion section).

Advices for Figures and Tables

- Figures and tables can be labelled consecutively (e.g. Figure 1, Figure 2, Figure 3) or by main chapters (Figure 1.1, Figure 1.2.a, Figure 1.2.b, Figure 2.1, ...). Figures and tables in pdf file(s) of the papers included in the results (option 2) are not counting in the figure / table numbering of the thesis. That means, if the Introduction includes Figures 1-3 and the final discussion further two figures, these are numbered as Figure 4 and 5, irrespective of the figures in the included pdf file(s).

- Figures and tables should be relatively close to the sequence of the text where they are quoted (not at the end of a chapter) and definitely not before they are called.
- The labelling of figures, axes and tables should be easy to read in the printed version and not with microscopic font size.
- The content of the figures and tables should be self-explanatory and an appropriate legend should be provided.
- Abbreviations used in figures and tables must be explained in the figure/table legends.
- The source of the figures and tables must be cited appropriately: examples are: "Figure 2 from reference 121 reproduced with permission"; "Table taken and adapted from reference 103 licensed under Creative Commons CC-BY 4.0."; "The figure was created and adapted based on figure 2 and 3 of reference 127".
- The student should be consistent in writing p-values throughout the thesis: either without spaces "p<0.001" or with spaces "p < 0.001" or capital P or small p.
- A space has always to be introduced between the number and the unit: e.g. 80 mg/dL. An exception is percentage since according to Webster there is no space between the number and percentage sign (e.g. 12%).
- The units have to be in correct SI format. Examples are mg/dL (not mg/dl), nmol/L, etc.

5.14 Discussion & Outlook

The discussion should cover all results. Results should not be re-iterated. Rather, the results (also of the different projects) should be discussed in a logical form. It should be explained how they advance the field and how they provide novel insights and different perspectives on the problem and the original objective(s) of the thesis. New aspects resulting from the synergies of different projects should be described. Novel perspectives and new thoughts, which have arisen since the paper has been published, should also be considered (e.g., have to be put into context with the newest literature published since the publication).

In general, it should be described how the results break new ground for the research field, and - as an outlook - which questions based on the results can be /should be addressed next. The outlook can also be part of an extra chapter, if preferred. The limitations and strengths of the study have to be addressed as well, even if already done so in each of the published main projects.

The discussion is not intended to be simply a copy-pasting of the discussions of the individual projects/papers that have already been published, but naturally, the major arguments will be pointed out again. When referring to the most important arguments, it is not required that the arguments are provided in quotation marks. Statements such as "as we discussed already in main project 2 ..." followed by the argument and referencing the paper, fulfills the requirement of correct citing.

5.15 Additional work done during the PhD thesis (optional)

This short chapter (typically 1-2 pages) can be included after the discussion section to describe additional scientific accomplishments of the PhD student that were not a main part of the PhD thesis.

Examples are:

- The student played a major role for the recruitment of patients and controls for the study XY which became not part of the thesis.
- The student established a new method to measure or investigate something.
- The student was involved as cooperation partner in a different project which was not part of the thesis. For example: "Due to my experience with mini gene assays I performed these experiments for the publication XY".

5.16 List of References

References allow the reader to unambiguously identify the source of information which is quoted.

Either Vancouver or Harvard style must be used (please see additional guidelines for citations below).

5.17 Appendices (optional)

5.18 Academic CV & list of publication (optional)

If a CV is included, personal information must NOT be added (see 5.18).

5.19 The following information must NOT be present in the PhD thesis:

Matriculation number

Address

Signature

Phone number

A CV with sensitive personal data

6 Gender-Sensitive Language and Respecting Gender Aspects

Gender-sensitive language must be used. Paying attention to differences regarding sex and gender during the work on the entire research problem and PhD thesis is required. The Guideline for Gender Medicine and Research, Guideline for Scientific Work can be found on the website of the Coordination Office for Equality, Advancement of Women, and Gender Research: https://www.i-med.ac.at/gendermed/documents/2016_leitfaden_drittmittel_en_web.pdf.

7 Checklist on the use of Artificial Intelligence

When using AI, be aware of potential risks:

- Maintain data protection and your own privacy, as well as that of others. **Never enter personal data, unpublished works, ideas, datasets, or patient information.**
- When using AI tools or general digital services, **check their handling of data protection.**
- **Respect copyright** by not inputting copyrighted materials (e.g., texts from students or teachers, interviews) into AI-based systems.

Be critical

- Text generated by large language models (LLM), can contain hallucinations, as well as incorrect and/or biased information, incorrect references, and plagiarism. Therefore, **always critically question the information provided by AI.**
- AI-generated images often perpetuate outdated stereotypes.
- **Fact check sources and quotes** from AI-based language models to ensure that the publications actually exist. **Read the originals and form your own opinion.**

Be transparent

- According to current legal regulations, LLM such as ChatGPT cannot be considered as authors' sources. Nevertheless, **indicate which passages of text were created with ChatGPT or AI tools.** Good scientific practice requires to indicate in the "Statement on the use of AI" (chapter 5.3) which tools were used. This includes the use of AI for the generation of text, images and code.

Be open and resourceful

- **Form your own opinion** by actively and constructively using ChatGPT or similar tools
- **Use educational courses** to raise awareness of good scientific practice and strengthen critical reflection.

For more detailed information please also read [Mitteilungsblatt \(i-med.ac.at\)](https://www.med.uni-wien.ac.at/medien/Mitteilungsblatt/i-med.ac.at).

8 Useful Information about References and Citation Style

It is recommended to use literature management application from the start and to use it consistently. A lot of work, frustration, and time for revisions may be saved. However, the student must not rely too

much on these applications, as these are helpful, but not without fault. Nearly every bibliography must be adjusted manually at the end.

There are various applications available which all basically do the same: they make sure that labelling citations and creating a bibliography is as simple and as consistent as possible. In addition, these applications allow to change the reference style with the push of a button. Frequently used Reference Management Software (citation programs) are:

- EndNote www.endnote.com
- Citavi www.citavi.com
- Zotero www.zotero.com
- Mendeley www.mendeley.com
- Papers www.papersapp.com

The Teaching and Study Administration recommends EndNote. However, each of these applications is absolutely sufficient for writing a PhD thesis and the IT Services Department [Abteilung für Informations-Kommunikations-Technologie] offers to students free usage of Endnote Web and Citavi, the online version of the software. This version allows students to manage up to 10,000 references and use them in Microsoft Word, amongst others.

To activate the software, the student must log in on a computer in the PC room of the IT Services Department located in the MZA user room and create a personal EndNote Web account. The corresponding link is available on the website www.myendnoteweb.com.

After the registration is complete, the student can use Endnote Web and manage the references from any computer. To make sure the account stays active, the student must log in on a computer in the PC room of the IT Services Department using this particular account at least once a year. This is necessary in order to limit the users to the active students of the Medical University.

Additional information about configuring and using the platform is available directly on the Endnote Web portal.

ATTENTION: The student should never rely blindly on the software! Each entry should be thoroughly and double checked for missing information and incorrect formatting!

9 Why are citations necessary at all?

The reason for referencing is scientific integrity. The student has to indicate very clearly that she/he/they is/are referring to somebody else's research results or to the student's previously published own; this is essential to value the intellectual work of other researchers. At the same time, the student reinforces her/his/their arguments with the results of other researchers. Another important purpose of referencing is to enable the reader to find and study the original sources. Hence, the student should strive to cite the original research papers, rather than the reviews.

Each citation/reference (and hence source of information) must be traceable. The student has to make this as easy as possible for the reader. Therefore, bibliographic entries must be

- complete,
- correct, and
- as reliable over time as possible

A bibliography entry which is incomplete (e.g., a book missing its year/edition/publisher) forces the reader to search for the actual publication themselves using the information provided by the student. This must be avoided. Therefore, the Digital Object Identifier (DOI) must be used for all references (whenever it is available). There will only be few exceptions in which the DOI is not available.

10 The reference style

Either Vancouver or Harvard style system must be used. The student has to be consistent throughout the text (however, the style used in the published pdf files obviously does not have to be changed).

A bibliography created with EndNote can be adjusted "by hand". Technically experienced users can adjust these applications using style sheets according to their needs.

At the beginning, there is always the question what is being cited and how. The student must use different forms depending on whether a book is cited, a journal entry, or a part of an edited volume; whether it is an exact quote, that the student is paraphrasing, or delivering proof for a statement.

For more details on citations, see appendix (chapter 12).

The student can download the Endnote styles for "Vancouver-MUI" and "Harvard-MUI" here:

https://www.i-med.ac.at/studium/studierende/clinical_phd/docs/Harvard-MUI.ens

https://www.i-med.ac.at/studium/studierende/clinical_phd/docs/Vancouver-MUI.ens

A few notes on these two styles:

- Both styles provided by MUI are adjusted for journal articles which are directly downloaded from PubMed into Endnote. Using this approach will result with high probability in the correct output format required. Nevertheless check carefully.
- All other sources such as books, edited books, book chapters, thesis, etc. are usually filled into Endnote by hand by the student. Therefore filling in the wrong fields will result in a wrong output format. This is the responsibility of the students.
- There are many Harvard styles around. The most pronounced differences between the Harvard style and the Vancouver style are 1) in-text citations are not made by numbers but by authors and 2) the reference list is ordered by authors and not by the first in-text citation. The MUI decided that the Harvard style applicable at our university is using the in-text citation typical for Harvard style but then provide the references in the reference list in the same formatting as for the Vancouver style but without numbering and sorted by authors. Which style to use is a decision which has to be made by the student together with the supervisor. However, it is probably less complicated when the Vancouver style is applied.
- **ATTENTION:** students who are using literature management applications others than Endnote have to adjust their output styles accordingly.

11 Important contact information and points of contact

If the student has any **questions related to formal formatting the PhD thesis**, including correct citation, she/he/they may contact **Mag. Dennis Huber**, Teaching and Study Organisation [Abteilung Lehr- und Studienorganisation]. Mag. Huber can also conduct a formal check of PhD thesis prior to the final submission. If this service is warranted, Mag. Huber should be contacted well ahead of time. The student must send him the pdf file of the thesis and not the printed version.

Mag. rer. nat. Dennis Huber

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For all **administrative matters** concerning the PhD thesis ranging from registration to submission of the thesis, Mag.^a Brigitte Amtmann, International Relations Department may be contacted:

Mag.^a phil. Brigitte Amtmann

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12 Appendix: Example of a cover page for one of the papers presented as pdf in the thesis

Paper 1 / Project 1

Title

Author A, Author B, Author C, Author D, Author E, Author F.

J Health Sci. 2019; 16:45-50.

Personal and co-author contributions

For this project, **Author A** (the PhD student) intensively searched the literature for various protocols used up to now, conceptualized the experiments, performed all laboratory experiments (except the biochemical analysis of the unknown components which was done by author D) and statistical analyses, interpreted the data, created all figures (except Figure 3, panel E) and tables for the manuscript and wrote and edited the original draft of the manuscript. **Author B**: conceptualization, data interpretation and reviewing and editing the manuscript. **Author C**: statistical expertise and reviewing and editing the manuscript. **Author D**: performed the biochemical analysis of the unknown components, and reviewing and editing of the manuscript. **Author E**: technical and methodological expertise and reviewing and editing the manuscript. **Author F**: conceptualization, data interpretation, funding acquisition and reviewing and editing the manuscript as well as corresponding author for the manuscript.

The following options for reproduction are only examples and the most appropriate option has to be given for each published paper:

Option 1: This paper is an open access article (Copyright 1969, Elsevier) distributed under the terms of the Creative Commons CC-BY 4.0 license, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Option 2: This paper is reproduced with permission of the publisher (permission of the publisher has to be provided when the thesis is submitted to the university).

Option 3: The journal allows to put the submitted or accepted version of the paper at any website (repository) but requires that the original article is referenced. Consider whether the journal allows to use the final printed pdf or only the final submitted version.

Option 4: This paper is reproduced with permission of the publisher after an embargo of 12 months (in this case see chapter 2 of this directive).

Option 5: The results of this project have not been published before.

13 Appendix on Citations and References

13.1 Some “sources” are not or only partly citable:

- Wikipedia: The student should not cite Wikipedia. The origin of its articles is unclear (Who wrote the entry? Who edited it?), and they are also volatile. The article can contain different (and contradicting) information on the next day or disappear altogether.
- Websites in general: Citing websites is critical: most websites reference other sources themselves. It is recommended to search for those sources and cite the original publication. If it is necessary to cite websites (e.g., information from a company website, data from Statistik Austria, data from the WHO), the template for citing websites (below) should be followed. However, those sources may not be available after some time.
- Flyers/brochures: Citing such sources must be avoided. Instead, it should be verified where the information originally came from and this source should be cited then. In most cases, it is almost impossible for the reader to obtain those flyers or brochures. Hence, this source fails when it comes to a key quality characteristic – its traceability.
- Lecture notes: Those are not citable either. The publications the lecturer extracted the information from has to be identified and cited. This also applies to PowerPoint slides.
- Oral correspondence: Citing such sources must be avoided. Instead, it should be verified from whom the information originally came from and this person should be asked for a reference.

13.2 What is needed for a citation to be correct?

Strictly speaking, a citation comprises three parts:

- A. The cited part in the text
- B. The mark directly next to the cited part
- C. The information in the bibliography (list of references)

Here is an example for all 3 parts of a journal article:

The importance of effective intrapersonal relationships between patients and healthcare providers cannot be underestimated [1].

(1) Williams B, Brown T, Boyle M, Dousek S. Psychometric testing of the Jefferson Scale of Empathy Health Profession Students’ version with Australian paramedic students. Nurs Health Sci. 2013; 15:45-50. DOI: [10.1111/j.1442-2018.2012.00719.x](https://doi.org/10.1111/j.1442-2018.2012.00719.x)

PART A: The importance of effective intrapersonal relationships between patients and healthcare providers cannot be underestimated. = the cited text

PART B: [1] = the Vancouver-conform mark which links the text to the bibliography, the standard

PART C: (1) Williams B, Brown T, Boyle M, Dousek S. Psychometric testing of the Jefferson Scale of Empathy Health Profession Students' version with Australian paramedic students. Nurs Health Sci. 2013; 15:45-50. DOI: [10.1111/j.1442-2018.2012.00719.x](https://doi.org/10.1111/j.1442-2018.2012.00719.x)

One of the most important issues for Part C is that the reference can be identified without any doubt (e.g. by searching in the PubMed).

13.3 The format of the Vancouver and Harvard bibliography / list of references

Journal articles in Vancouver style:

Below are examples of journal articles and how they should be cited. Here are some advices you should follow to avoid problems:

- The format in the reference list is as follows: Author(s). Title. Journal (abbreviated). Year; volume:pages. DOI: xxx.
- It is not allowed to use the name of the journal spelled out or a non-official abbreviation. For example the official abbreviation of the "The Journal of Clinical Investigation" is "J Clin Invest" and not "JCI". The correct abbreviation of a journal's name (NLM title abbreviation) can be found in the PubMed database: <http://www.ncbi.nlm.nih.gov/nlmcatalog/journals>
- Check carefully how the author names are given. In case of 7 or more authors, only the first 6 will be given followed by ", et al.". An example is given in references [1, 2].
- Referencing within the text in case of one citation [3], in case of 2 citations [1, 2] or in case of more citations [1-5] or [1, 4-6].
- For all journal citations the student must provide the DOI (Digital Object Identifier) whenever DOIs are available in PubMed. With the DOI number a publication is clearly identified and therefore it is no longer necessary to distinguish between electronic publications, print-only publications or "Online ahead of print". However, it has to be checked shortly before the submission of the thesis whether updates on volumes and page numbers became meanwhile available. For example a paper published "Online ahead of print" 2 years ago should meanwhile have the final volume and page numbers available.
- It is not required to give the exact publication date (e.g. March 13, 2017) as well as the issue of the volume, but it has to be uniform.

Here are some typical examples:

Journal article with DOI-Number: [3]

Journal article without DOI-Number (very old article which has no DOI-Number): [4]

Journal article with an e-collection number: [1]

Journal article published online ahead of print and is with the DOI-Number clearly identified [5]

Journal article in the same journal but with the final page numbers [2].

Journal article which does not list authors, the reference should be given as in this example [6].

List of references

1. Romagnuolo R, Scipione CA, Marcovina SM, Gemin M, Seidah NG, Boffa MB, et al. Roles of the low density lipoprotein receptor and related receptors in inhibition of lipoprotein(a) internalization by proprotein convertase subtilisin/kexin type 9. PLoS One. 2017; 12:e0180869. DOI: <https://doi.org/10.1371/journal.pone.0180869>
2. Deng YW, Liu F, Li ZT, Gao JH, Zhao Y, Yang XL, et al. Hyperglycemia promotes myocardial dysfunction via the ERS-MAPK10 signaling pathway in db/db mice. Lab Invest. 2022; 102:1192-202. DOI: <https://doi.org/10.1038/s41374-022-00819-2>
3. Thayabaran D, Tsui APT, Ebmeier S, Cegla J, David A, Jones B. The effect of adjusting LDL-cholesterol for Lp(a)-cholesterol on the diagnosis of familial hypercholesterolaemia. J Clin Lipidol. 2023; 17:244-54. DOI: <https://doi.org/10.1016/j.jacl.2023.01.006>
4. Berg K. A new serum type system in man - the Lp system. Acta Path Microbiol Scand. 1963; 59:369-82.
5. Jenike AE, Bunkelman B, Perzel Mandell KA, Oduor CI, Chin D, Mair D, et al. Expression Microdissection for the analysis of miRNA in a single cell type. Lab Invest. 2023:100133. DOI: <https://doi.org/10.1016/j.labinv.2023.100133>
6. [No authors listed] Rapid intubation with fazadinium. Anaesthesia. 1977; 32:668-9.

Additional advice for journal articles in Harvard style:

- Referencing within the text in case of one citation (Thayabaran et al., 2023), in case of 2 citations (Deng et al., 2022, Romagnuolo et al., 2017) or in case of more citations (Berg, 1963, Deng et al., 2022, Jenike et al., 2023, Romagnuolo et al., 2017, Thayabaran et al., 2023) or ([No authors listed] 1977, Berg, 1963, Jenike et al., 2023, Romagnuolo et al., 2017).
- Referencing within the text in case of two or more citations from the same first author from the same year (Tsimikas, 2021, Tsimikas et al., 2021a, Tsimikas et al., 2021b).

List of references

[No authors listed] Rapid intubation with fazadinium. Anaesthesia. 1977; 32:668-9.

Berg K. A new serum type system in man - the Lp system. Acta Path Microbiol Scand. 1963; 59:369-382.

Berg K & Mohr J. Genetics of the LP system. Acta Genet. Stat. Med. 1963; 13:349-360.

Deng YW, Liu F, Li ZT, Gao JH, Zhao Y, Yang XL, et al. Hyperglycemia promotes myocardial dysfunction via the ERS-MAPK10 signaling pathway in db/db mice. Lab Invest. 2022; 102:1192-1202. DOI: <https://doi.org/10.1038/s41374-022-00819-2>

- Jenike AE, Bunkelman B, Perzel Mandell KA, Oduor CI, Chin D, Mair D, et al. Expression Microdissection for the analysis of miRNA in a single cell type. *Lab Invest.* 2023;100:133. DOI: <https://doi.org/10.1016/j.labinv.2023.100133>
- Romagnuolo R, Scipione CA, Marcovina SM, Gemin M, Seidah NG, Boffa MB, et al. Roles of the low density lipoprotein receptor and related receptors in inhibition of lipoprotein(a) internalization by proprotein convertase subtilisin/kexin type 9. *PLoS One.* 2017; 12:e0180869. DOI: <https://doi.org/10.1371/journal.pone.0180869>
- Thayabaran D, Tsui APT, Ebmeier S, Cegla J, David A & Jones B. The effect of adjusting LDL-cholesterol for Lp(a)-cholesterol on the diagnosis of familial hypercholesterolaemia. *J Clin Lipidol.* 2023; 17:244-254. DOI: <https://doi.org/10.1016/j.jacl.2023.01.006>
- Tsimikas S. Elevated lipoprotein(a) and the risk of stroke in children, young adults, and the elderly. *Eur Heart J.* 2021; 42:2197-2200. DOI: <https://doi.org/10.1093/eurheartj/ehab251>
- Tsimikas S, Moriarty PM & Stroes ES. Emerging RNA Therapeutics to Lower Blood Levels of Lp(a): JACC Focus Seminar 2/4. *J Am Coll Cardiol.* 2021a; 77:1576-1589. DOI: <https://doi.org/10.1016/j.jacc.2021.01.051>
- Tsimikas S, Reeves RR & Patel MP. Always Present, But Now Rediscovered: Lp(a) as a Predictor of Long-Term Outcomes in PCI. *JACC Cardiovasc Interv.* 2021b; 14:2069-2072. DOI: <https://doi.org/10.1016/j.jcin.2021.08.032>

13.4 Special Cases

There will frequently be special cases, for example journals without volume/issue information, pure online journals, or articles without an author. In most of those cases, the problem can be solved by conducting an online search about the Vancouver or Harvard referencing systems. The Teaching and Study Administration may be contacted as well (see section 10).

13.5 How to cite books, diploma and master's theses, as well as PhD theses?

Author(s). Title. Edition. Place of publication: publisher. Year.

13.5.1 Monography

Timischl W. *Angewandte Statistik. Eine Einführung für Biologen und Mediziner.* 3rd edition. Vienna: Springer. 2013.

Bortz J, Lienert GA. *Kurzgefasste Statistik für die Klinik. Leitfaden für die verteilungsfreie Analyse kleiner Stichproben.* 3rd edition. Heidelberg: Springer Medizin Verlag. 2008.

13.5.2 A book with editors

Speicher MR, Antonarakis SE, Motulsky AG [ed.]. *Vogel and Motulsky's Human Genetics.* Fourth edition. Berlin Heidelberg: Springer-Verlag; 2010. DOI: <https://doi.org/10.1007/978-3-540-37654-5>

13.5.3 A chapter from an edited book

Motulsky A. History of human genetics. In: Speicher MR, Antonarakis S, Motulsky A, [ed.]. Vogel and Motulsky's Human Genetics. Fourth edition. Berlin-Heidelberg: Springer-Verlag; 2010. p. 13-29. DOI: <https://doi.org/10.1007/978-3-540-37654-5>

13.5.4 How to cite a figure from a book?

We recommend to ask the publisher for permission beforehand, as those pictures are subject to copyright laws and a diploma thesis/PhD thesis is also regarded as a publication. If the student has permission to print the picture in the thesis, this should be done as follows:

Author(s). Title of the book. Edition. Place of publication: publisher. Year. Page on which the picture can be found. Caption of the picture.

Doe J. Textbook of Medicine. 90th edition. Innsbruck: Universitätsverlag. 2015. p. 20. Picture 5.1 The Human Muscular System.

NOTE: Tables in books should be cited in the same way. However, like pictures, use them with caution for copyright reasons. Never use someone else's table formatted as a picture.

13.5.5 How to cite a table from a journal?

Where necessary, the description of the table has to be added to the source. Here a (fictional) example:

Doe J. A paper on something. J Spec Sci Fi. 2009; 1:12-9. Table 1.2 Results of the first trial. p. 18. doi: 92345wg/07

13.5.6 Diploma thesis

Doe J. Lung Diseases [diploma thesis]. Anytown: Free University Any Country. 2016.

13.5.7 Master's thesis

Doe J. Functions of the human lung [Master's thesis]. Anytown: Free University Any Country. 2016.

13.5.8 PhD thesis

Doe J. Special Areas of Very Special Research [PhD thesis]. Anytown: Free University Any Country. 2016.

13.6 How to cite sources from the internet?

Author(s)/Editor/Company. Title [Internet/Image on the Internet/Online document]. Date of creation of the source [last access date]. Available at: Link.

13.6.1 Websites

Statistik Austria. Unfälle mit Personenschaden [Internet]. 2015 [last accessed on 2015 Jul 10]. Available from:

http://www.statistik.at/web_de/statistiken/energie_umwelt_innovation_mobilitaet/verkehr/strasse/u_nfaelle_mit_personenschaden/index.html.

World Health Organization (WHO). Tobacco Fact Sheet No 339 [Internet]. 2015 [last accessed on 2015 Jul 10]. Available from: <http://www.who.int/mediacentre/factsheets/fs339/en/>.

Johns Hopkins University, Online Mendelian Inheritance in Man (OMIM). #192500 ICD+ Long QT Syndrome 1; LQT1 [Internet]. 2015 Sep 23 [last accessed on 2016 Feb 6]. Available from: <http://omim.org/entry/192500?search=long%20qt%20syndrome-1&highlight=syndromic%20syndrome%20qt%20long%20syndrome1>.

13.6.2 Online document

World Health Organization. Global status reports on alcohol and health 2014 [online document]. Luxembourg: World Health Organization; 2014 [cited on 2016 Feb 18]. Available at: http://apps.who.int/iris/bitstream/10665/112736/1/9789240692763_eng.pdf?ua=1.

13.6.3 Picture from the internet

Not all pictures on the internet are “free” from a legal point of view. Many of them are subject to copyright. Conduct the appropriate research before using a picture from an unsafe online source.

Vitanet. Vereinfachte Darstellung der Herzens und der herznahen Gefäße [image on the internet]. Without date [last accessed on 2016 Apr 18]. Available at: http://www.vitanet.de/f/16727s460x397/alte_struktur/herz-kreislauf/anatomie/herz/Herz_Lunge%5B1%5D.jpg.

IMPORTANT: Online sources must ALWAYS include the date on which it was last accessed. The placeholder “Date unknown” can be used, as the date on which the website has been created is not always available.

13.7 How to cite a conference presentation?

Author(s). Title/topic [lecture]. Name of the event. Event location, date. Place of publication of the edited volume (= optional): Publisher. Year.

Burghaus D, Kappes K, Bauland A, Heue M, Kindler-Röhrborn A, Becker JC, et al. Gendersensibilität und geschlechterspezifische Rollenvorstellungen in der Medizin: Eine Bestandsaufnahme [lecture]. Annual Conference of the German Association for Medical Education (GMA). Aachen, 2012 Sep 27-29. Düsseldorf: German Medical Science GMS Publishing House; 2012.

14 CHECKLIST (parts not mentioned here are also important)

- Before you start to write your PhD thesis, **read carefully the full version of the Directive** for a Dissertation (PhD-thesis) at the Medical University of Innsbruck
- The PhD student is responsible for the contents of the PhD thesis
- The right to re-use published content (e.g. figures) must be checked with the publisher and eventually permissions must be obtained by the student
- PhD thesis: bound hard cover, A4 & structured: structure of front page, **Statement of originality (not signed!)** also in German, Table of contents, Key words, List of Abbreviations, Acknowledgments, Abstracts in English & in German (max. 1 page each)
- Introduction** (dealing with all parts of the thesis; should read like a review and leading to the topic of the thesis, Style: Harvard or Vancouver), **Aims** (max. 1 page), **Mat&Meths** (detailed or referenced), **Results/Papers** structured in chapters either by already published pdfs (only allowed when leading author) or unpublished material; each subchapters of the Results/Papers section to be introduced by detailed description of student's contributions and statements on permissions for reproduction of figures and included pdfs; **Discussion** (dealing with all parts) containing limitations and outlook.
- List of References as described in the Directive** – remember, references ALWAYS have to be checked after a citation program has dealt with these – non-journal references, such as books, chapters, theses, websites etc. are especially error-prone!
- DOI numbers must be given for all references** (except they do not have a DOI)!
- Length of a typical PhD thesis 70 – 100 pages (an inserted pdf counts for approx. 20-30 pages)
- Personal information must not be added to the thesis (listed under 5.18)
- Coordinator must see the final version before print