

# Curriculum Vitae – Dr. Pourya Raei

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## Personal Information

**Name:** Dr. Pourya Raei

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**Current Position:** Assistant Professor, Department of Biology and Anatomical Sciences, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran

**Birth Date:** January 11, 1993

**Education:** DVM - PhD (Department of Biology and Anatomical Sciences), Shahid Beheshti University of Medical Sciences

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## Citation Metrics

Platform	Total Citations	h-index	i10-index
<b>Scopus</b>	<b>8,111</b> (by 7,837 documents)	<b>17</b>	N/A
<b>Google Scholar</b>	<b>10105</b>	<b>19</b>	<b>26</b>

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## Research Interests

Infertility, Reproductive Biology, spermatogenesis, autophagy, telomere biology, oxidative stress, gene therapy, CRISPR, siRNA delivery, reproductive toxicology, IVF/ICSI, animal modeling.

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## Full Publication List (37 Works)

### 2026

1. **Effects of quercetin-loaded nanoselenium on spermatogenesis in a mouse model of cyclophosphamide-induced testicular damage** – *Clinical and Experimental Reproductive Medicine* (2026 Jan 5) – [Co-author]

### 2025

2. **The protective effect of bromelain on testicular dysfunction and oxidative stress induced by REM sleep deprivation in adult male rats** – *Tissue and Cell*, Volume 95, 102927 (2025) – [Co-corresponding Author]
3. **The role of granulocyte-macrophage colony-stimulating factor in inducing autophagy in the spermatozoa of patients with asthenoteratozoospermia** – *Clinical and Experimental Reproductive Medicine* (2025-09) – [Co-author]
4. **Therapeutic effects of curcumin nanoemulsion on cyclophosphamide-induced testicular toxicity in adult male mice** – *Clinical and Experimental Reproductive Medicine* (2025-06) – [First Author]
5. **The effect of human Wharton's jelly stem cell-conditioned medium on spermatogenesis in azoospermic mice with scrotal hyperthermia** – *Physiology and Pharmacology*, Volume 29, Issue 2, pp. 205-218 (2025) – [Co-author]

6. **Investigating the Microbiota of Ovarian Follicular Fluid and Vaginal Secretions in Infertile Women with Polycystic Ovary Syndrome: A Prospective Cohort Study** – *Archives of Clinical Infectious Diseases*, Volume 20, Issue 6, e167638 (2025) – [Co-author]

## 2024

7. **Chronic Administration of Lisdexamfetamine Induces Apoptosis and Inflammation and Reduces Sperm Quality in Adult Male Rats** – *Reproductive Sciences* (2024)
8. **Global age-sex-specific mortality, life expectancy, and population estimates, 1950–2021** – *The Lancet* (2024)
9. **Global fertility in 204 countries and territories, 1950–2021, with forecasts to 2100** – *The Lancet* (2024)
10. **Global, regional, and national burden of disorders affecting the nervous system, 1990–2021** – *The Lancet Neurology* (2024)
11. **Global, regional, and national incidence and mortality burden of non-COVID-19 lower respiratory infections, 1990–2021** – *The Lancet Infectious Diseases* (2024)
12. **Recent Advances in CRISPR/Cas9-Mediated Genome Editing in Leishmania Strains** – *Acta Parasitologica* (2024)

## 2023

13. **Autophagy, a critical element in the aging male reproductive disorders and prostate cancer: a therapeutic point of view** – *Reproductive Biology and Endocrinology* (2023) – [First Author]
14. **Evaluation of Human Papillomavirus in the Semen of Infertile Men and Its Relationship with Semen Quality** – *Archives of Clinical Infectious Diseases* (2023)
15. **Global, regional, and national burden of diabetes from 1990 to 2021, with projections to 2050** – *The Lancet* (2023)
16. **Global, regional, and national incidence of six major immune-mediated inflammatory diseases** – *eClinicalMedicine* (2023)

17. **Male obesity is associated with sperm telomere shortening and aberrant mRNA expression of autophagy-related genes** – *Basic and Clinical Andrology* (2023) – [First Author]
18. **Prevalence of Human Papillomavirus in Iranian infertile men and its association with semen quality** – *Research Square* (2023)

## 2022

19. **An elderberry-supplemented diet improves spermatogenesis in mice with busulfan-induced azoospermia** – *Reproduction, Fertility and Development* (2022)
20. **Comparative Effect of Photobiomodulation on Human Semen Samples Pre- and Post-Cryopreservation** – *Reproductive Sciences* (2022)
21. **Curcumin and its derivatives in cancer therapy: Potentiating antitumor activity of cisplatin and reducing side effects** – *Phytotherapy Research* (2022)
22. **Long non-coding RNAs as new players in bladder cancer** – *Life Sciences* (2022)
23. **Therapeutic Effects of Edaravone on Azoospermia** – *Journal of Reproduction and Infertility* (2022) – [Co-corresponding Author]
24. **Therapeutic potentials of CRISPR-Cas genome editing technology in human viral infections** – *Biomedicine and Pharmacotherapy* (2022)
25. **Recent Advances in siRNA Delivery Systems for Prostate Cancer Therapy** – *Current Pharmaceutical Biotechnology* (2022-03)

## 2021

26. **An effective method for establishing animal models of azoospermia and oligospermia** – *Andrologia* (2021)
27. **Antimicrobial peptides as potential therapeutics for breast cancer** – *Pharmacological Research* (2021)
28. **Association between rs1049174 NKG2D gene polymorphism and idiopathic recurrent spontaneous abortion** – *Journal of Obstetrics and Gynaecology* (2021)
29. **Association of dietary insulinaemic potential and odds of non-alcoholic fatty liver disease** – *Journal of Human Nutrition and Dietetics* (2021)

30. **Nonviral siRNA delivery systems for pancreatic cancer therapy** – *Biotechnology and Bioengineering* (2021)
31. **The evaluation of Human papilloma virus and human herpes viruses in semen samples** – *Andrologia* (2021)
32. **Association of dietary fiber and depression symptom: A meta-analysis** – *Complementary Therapies in Medicine* (2021-01)

## 2020

33. **Photobiomodulation restores spermatogenesis in transient scrotal hyperthermia-induced mice** – *Life Sciences* (2020-08)
34. **Curcumin-Loaded Iron Particle improvement of spermatogenesis in azoospermic mouse induced by long-term scrotal hyperthermia** – *Reproductive Sciences* (2020-08-11)
35. **Antimicrobial peptides: a promising strategy for lung cancer drug discovery?** – *Expert Opinion on Drug Discovery* (2020-08-04)
36. **Silymarin protects the structure of kidney in neonatal rats exposed to maternal cadmium toxicity** – *Veterinary Research Forum* (2020-06)

## 2018

37. **Airway Epithelial Barrier Dysfunction in Chronic Obstructive Pulmonary Disease: Role of Cigarette Smoke Exposure** – *American Journal of Respiratory Cell and Molecular Biology* (2018-02)
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## Books & Book Chapters

### Books

- **2016** – *Comprehensive Vaccination of Livestock and Poultry*

### Book Chapters

- **2025** – **Introduction to Cranio-Maxillofacial Bone Tissue Engineering** – In: Keyhan, S.O., Bohluli, B., Fallahi, H.R., Khojasteh, A., Fattahi, T. (eds) *Handbook of Oral and Maxillofacial Surgery and Implantology*. Springer, Cham – [Co-author]
  - **2024** – **Novel Biomaterials Used for Cranio-Maxillofacial Bone Engineering** – In: Keyhan, S.O., Bohluli, B., Fallahi, H.R., Khojasteh, A., Fattahi, T. (eds) *Handbook of Oral and Maxillofacial Surgery and Implantology*. Springer, Cham – [Co-author]
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### Conference Presentations

- **2017** – *Effect of Quercus brantii fruit extract on Leydig cells in diabetic rats* – 4th ISERB, Tehran, Iran
- **2017** – *Effect of aerobic training on sperm quality* – 4th ISERB, Tehran, Iran
- **2016** – *Coconut meat extract on sperm quality* – 3rd ISERB, Tehran, Iran
- **2016** – *Coconut meat extract in type II diabetic rats* – 18th Royan International Twin Congress, Tehran, Iran
- **2015** – *Zataria multiflora essential oil induces apoptosis in lung cancer* – 13th ICIA, Tabriz, Iran
- **2015** – *Avocado seed extract on epididymis structure in diabetic mice* – 19th NBC, Tabriz, Iran
- **2014** – *Silymarin protects bronchial epithelium from cadmium toxicity* – 3rd International Conference on Medical Herbs, Iran

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## **Principal Investigator (PI) Projects**

### **PI Projects Under Review**

1. **Investigating the effects of a diet containing pinoresinol on spermatogenesis in ifosfamide-induced oligozoospermic mice** – *Under review by Faculty/Center*

### **Ongoing PI Projects**

2. **Investigating the effect of Elderberry (*Sambucus nigra*) diet on apoptosis and inflammation in the testis of adult male rats treated with methamphetamine** – *Ongoing*
3. **Investigating the effects of Elderberry (*Sambucus nigra*) diet on spermatogenesis in cyclophosphamide-induced oligozoospermic mice** – *Ongoing*

### **Completed PI Projects**

4. **Investigating the effects of lycopene on spermatogenesis in ifosfamide-induced oligozoospermic NMRI mice** – *Completed*

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## **Research Projects (as Co-Researcher/Co-Worker)**

### **Projects Under Review / Initial Approval**

1. **Effect of freezing on sperm parameters, apoptosis indices, DNA integrity, oxidative stress, and expression of microRNAs related to sperm quality in men with asthenozoospermia** – *Under review by Faculty/Center*
2. **Evaluation of functional sperm indices based on the presence or absence of ubiquitin protein in infertile men with sperm DNA fragmentation: Comparison of MACS and DGC methods** – *Under review by Faculty/Center*
3. **Effectiveness of Progesterol compared to placebo on chromatin maturation, DNA integrity, and sperm parameters in men with metabolic syndrome** – *Initial approval by Faculty/Center*
4. **Effects of Ashwagandha (Withania somnifera) on spermatogenesis in busulfan-induced oligospermic adult male mice** – *Under review / Referred back from Ethics Committee*

## **Ongoing Projects**

5. **Effect of age on sperm DNA damage and viability in men referred to Imam Hossein Hospital (2024-2025)** – *Ongoing*
6. **Association between low motility and sperm DNA integrity in men referred to Imam Hossein Hospital (2024-2025)** – *Ongoing*
7. **Therapeutic effect of Elderberry on cyclophosphamide-induced ovarian damage in adult female mice** – *Ongoing*
8. **Evaluation of functional sperm indices based on the presence or absence of ubiquitin protein in infertile men with DNA fragmentation issues** – *Ongoing*
9. **Effect of sperm preparation using microfluidic technique compared to Swim-up method on functional sperm indices and ICSI outcomes in infertile men with sperm DNA fragmentation** – *Ongoing*
10. **Association between embryo age at transfer and pregnancy outcomes in IVF-derived embryos** – *Ongoing*
11. **Association between sperm morphology and quality of IVF-derived embryos** – *Ongoing*
12. **Effect of nano-selenium loaded with quercetin on spermatogenesis in cyclophosphamide-induced azoospermic mice** – *Ongoing*
13. **Therapeutic effects of melatonin loaded on polylactic acid/chitosan hybrid nanoparticles on spermatogenesis in cyclophosphamide-induced azoospermic mice** – *Ongoing*

## Completed Projects (Fully Settled)

14. **Effect of cigarette smoking on sperm parameters in men referred to Imam Hossein Hospital (2024-2025) – Completed**
  15. **Effect of Bromoline on spermatogenesis in rats following REM sleep deprivation – Completed**
  16. **Effect of Bromoline on sperm parameters and testicular tissue in rats following REM sleep deprivation – Completed**
  17. **Effects of curcumin nanoemulsion on improving spermatogenesis in cyclophosphamide-induced azoospermic mice – Completed**
  18. **Effects of Elderberry diet on improving spermatogenesis in busulfan-induced azoospermic mice – Completed**
  19. **Antioxidant effect of Edaravone on semen parameters, testicular dysfunction, and apoptosis in busulfan-induced azoospermic mice – Completed**
  20. **Systematic review of non-viral targeted drug delivery systems for siRNA delivery to pancreatic cancer tissue – Completed**
  21. **Systematic review of the use of human antimicrobial peptides for breast cancer treatment – Completed**
  22. **Evaluation of sperm functional characteristics and associated factors in men with HPV infection referred to Taleghani Infertility Center (2021) – Completed**
  23. **Evaluation of autophagy-related gene expression (Bcl2, Beclin1, AMPK $\alpha$ 1, Bax), apoptotic changes, telomere length, and DNA integrity in spermatozoa of obese subfertile men compared to normal-weight fertile men – Completed**
  24. **Prevalence of Epstein-Barr virus, Herpesvirus type 6, and Cytomegalovirus in semen samples of infertile men compared to fertile individuals – Completed**
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## Inventions

- **2016** – Square dermatome for veterinary surgery

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## Laboratory Skills

- **Assisted Reproduction:** IVF, ICSI, Embryo culture, Embryo transfer, Oocyte denuding, Mouse Embryo Assay (MEA), Embryo cryopreservation, Oocyte cryopreservation
- **Sperm Analysis:** Semen analysis, Sperm freezing, Vitality tests (Eosin-nigrosine, HOS, triple staining), DNA fragmentation (SCD, TUNEL), Chromatin maturation (Aniline blue, CMA3), Telomere length assay
- **Histology:** Conventional histology, Stereology, Immunohistochemistry, Immunocytochemistry
- **Microscopy:** Conventional light, Phase contrast, Fluorescent, Stereo, Inverted
- **Molecular Biology:** RNA/DNA extraction, ELISA
- **Animal Models:** Azoospermia/oligospermia (chemotherapy, EDC, hyperthermia), Varicocele, Obesity, Type II diabetes, Heavy metal toxicity (cadmium, lead)

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## International Certifications

- **2020** – The Ideal IVF Lab 1: The Environment – QUARTEC
- **2020** – The Ideal IVF Lab 1: The Equipment – QUARTEC
- **2020** – The Ideal IVF Lab 1: The Culture Medium – QUARTEC
- **2021** – Trophectoderm Biopsy: Technical Difficulties and Tips – ESHRE
- **2021** – Canary in the Mineshaft: How to Use KPIs to Detect Shifts in Quality of Your Culture System – ESHRE