

Maryam Bemanalizadeh, MD

maryam.bemanalizadeh@gmail.com | [Google Scholar profile](#) | [LinkedIn profile](#)

EDUCATION

Doctor of Medicine (MD)

Isfahan University of Medical Sciences

Magna cum laude | GPA: 3.65 / 4.0

Isfahan, Iran

October 2012 - October 2019

PUBLICATIONS, CONFERENCES, AND PEER REVIEW ACTIVITIES

H-index: 12

i10-index: 16

Citations: 1992

Publications Under Review

1. Mansouri V, **Bemanalizadeh M**, Jamshidi F, Ahmadbeigi N
Comparing the Biodistribution of Adeno-associated Viruses with Serotypes rh10, PHP.eB, and AAV9 in CNS and Peripheral Tissues of Newborn Mice via Intravenous Injection
Scientific Reports
2. Shiehzadeh S, Darvishi A, Falahati M, Jannesari Ladani A, **Bemanalizadeh M (corresponding author)**
Exploring Protein Biomarkers in Motor Dysfunctions Associated with Parkinson's Disease
Molecular Neurobiology
3. Saberian P, Sadeghi M, Mayeli M, **Bemanalizadeh M (corresponding author)**
Predictive Role of White Matter Hyperintensities in Cognitive Decline in Alzheimer's Dementia
European Journal of Neurology
4. **Bemanalizadeh M**, Nasiri H, Azaraein M, ADNI
Polygenic Hazard Score as a Mediator between CSF Biomarkers and Brain Glucose Metabolism in Alzheimer's disease
BMC Neurology

Published articles

1. **Bemanalizadeh M**, Heidary L, Dakkali MS, Hadizadeh S, Ahmadbeigi N, Heidari M, Zamani G, Ashrafi M, Mansouri V,
Combination therapies in spinal muscular atrophy: a systematic review
European Journal of Pediatrics, 2025 Aug, accepted
2. Mansouri V, **Bemanalizadeh M**, Ahmadbeigi N, Shakeri R, Saffar H. Hiva Saffar
Long-Term Safety and Efficacy of AAV9 Vectors Expressing Human SMN1 Gene: A Preclinical Study
Basic & Clinical Pharmacology & Toxicology. 2025 Jul;137(1):e70064. DOI: [10.1111/bcpt.70064](https://doi.org/10.1111/bcpt.70064)
3. **Bemanalizadeh M**, Mansouri V.
Beyond Numbers: A Call to Action for Accurate Estimation of Spinal Muscular Atrophy in the Middle East and North Africa.
Pediatric Neurology. 2024 Sep 25. DOI: [10.1016/j.pediatrneurol.2024.09.024](https://doi.org/10.1016/j.pediatrneurol.2024.09.024)
4. Azadikhah Jahromi S, Parhizkar A, Mohammadi M, Kazemi D, Tajik MH, Nazari M, **Bemanalizadeh M**, Alavi SMA, et al.
A comprehensive investigation of the associations between tensor-based morphometry indices and executive functions, memory, language, and visuospatial abilities in patients in the Alzheimer's disease continuum.
Clinical Neurology and Neurosurgery. 2024 Sep 11:108542. DOI: [10.1016/j.clineuro.2024.108542](https://doi.org/10.1016/j.clineuro.2024.108542)
5. Hosseinpour S, **Bemanalizadeh M**, Mohammadi P, Ashrafi MR, Heidari M. (co-first author)
An overview of early-onset cerebellar ataxia: a practical guideline. DOI: [10.1007/s13760-024-02595-w](https://doi.org/10.1007/s13760-024-02595-w)
Acta Neurologica Belgica. 2024 Jul 1:1-4.
6. Steinmetz JD, Seeher KM, Schiess N, ..., **Bemanalizadeh M**, ..., Global, regional, and national burden of disorders affecting the nervous system, 1990–2021: a systematic analysis for the Global Burden of Disease Study 2021.
The Lancet Neurology. 2024 Apr 1;23(4):344-81. DOI: [10.1016/S1474-4422\(24\)00038-3](https://doi.org/10.1016/S1474-4422(24)00038-3)
7. Hosseinpour S, Pazouki R, Ashrafi MR, **Bemanalizadeh M**, Akbari MG, Rezaei S, Parvaneh N, Heidari M, et al.
Exploring the Phenotypic Profile of Acute Flaccid Paralysis: Insights from Third-Level Pediatric Emergency Unit
Iranian Journal of Child Neurology. 2024;18(4):33-45. DOI: [10.22037/ijcn.v18i4.43749](https://doi.org/10.22037/ijcn.v18i4.43749)
8. Dehnavi AZ, **Bemanalizadeh M**, Kahani SM, Ashrafi MR, Rohani M, Toosi MB, Heidari M, et al. (co-first author)
Phenotype and genotype heterogeneity of PLA2G6-associated neurodegeneration in a cohort of pediatrics and adults.

Orphanet Journal of Rare Diseases. 2023 Dec;18(1):1-8. DOI: [10.1186/s13023-023-02780-9](https://doi.org/10.1186/s13023-023-02780-9)

9. Mansouri V, Tavasoli AR, ..., Heidari M, Hosseinpour S, Sharifianjazi F, **Bemanalizadeh M (corresponding author)**. The efficacy and safety of miglustat in the treatment of GM2 gangliosidosis: a systematic review. *European Journal of Neurology*. 2023 Sep;30(9):2919-45. DOI: [10.1111/ene.15871](https://doi.org/10.1111/ene.15871)
10. Mallahzadeh A, Shafie M, Tahvilian M, Sadeghi M, Moslemian G, Barzin P, **Bemanalizadeh M**, Mayeli M, et al. White matter tracts alterations underpinning reward and conflict processing. *Journal of Affective Disorders*. 2023 Jun 15;331:251-8. DOI: [10.1016/j.jad.2023.03.070](https://doi.org/10.1016/j.jad.2023.03.070)
11. Mansouri V, Heidari M, **Bemanalizadeh M**, Azizimalamiri R, Nafissi S, Akbari MG, Barzegar M, Moayed AR, Badv RS, et al. The First Report of Iranian Registry of patients with spinal muscular atrophy. *Journal of Neuromuscular Diseases*. 2023 Jan 1;10(2):211-25. DOI: [10.3233/JND-221614](https://doi.org/10.3233/JND-221614)
12. Salari M, Chitsaz A, Etemadifar M, Najafi MR, Mirmosayyeb O, **Bemanalizadeh M**, Panahi F, Mirzajani H, et al. Evaluation of non-motor symptoms and their impact on quality of life in patients with Parkinson's disease *Iranian Journal of Neurology*. 2017 Jul 6;16(3):118. PMID: [29114366](https://pubmed.ncbi.nlm.nih.gov/29114366/)

Conference Presentations

1. **Bemanalizadeh M**, Mansouri V
Comparative Analysis of Transgene Expression of Neurotropic AAV Serotypes
28th Annual Meeting of the American Society of Gene & Cell Therapy, New Orleans, USA, May 2025, poster presentation
2. **Bemanalizadeh M**, Mansouri V, Ahmadbeigi Naser
Short-Term Hurdles, Long-Term Promise: AAV9-SMN1 Gene Therapy for SMA
28th Annual Meeting of the American Society of Gene & Cell Therapy, New Orleans, USA, May 2025, poster presentation
3. **Bemanalizadeh M**, Mansouri V
Over a Decade of Gene Therapy Trials: Evolution from 2010 to 2025
28th Annual Meeting of the American Society of Gene & Cell Therapy, New Orleans, USA, May 2025, poster presentation
4. Zare Dehnavi A, **Bemanalizadeh M**, et al.
Phenotype and genotype heterogeneity of PLA2G6-associated neurodegeneration in a cohort of pediatrics and adults
American Academy of Neurology 2023 Annual Meeting, Boston, USA, April 2023, Oral presentation

Books/ Book Chapters

1. Gene Therapy in Neurodegenerative Disorders: from Bench to Bedside (*upcoming book*)
Edited by Mansouri V, and **Bemanalizadeh M**. Elsevier, Expected Publication: 2026.
2. **Bemanalizadeh M**, Bidihian N, Kelishadi R.
Early Screening of Neurodevelopment. In: Nature, Nurture, and Neurodevelopment. Springer, Singapore. 2024

Peer-Reviewing and Editorial Activities

1. **PLOS ONE** July 2024 - Present
Academic Editor: Handled over 15 manuscripts
2. **Springer Nature, PLOS, and Cell Press journals** (*Molecular Therapy, PLOS One, Scientific Reports, BMC Psychiatry, etc.*)
Reviewer: Peer-reviewed over 30 submitted manuscripts July 2024 - Present

PROFESSIONAL EXPERIENCE

NeuroTRACT Association, Tehran University of Medical Sciences

Research Mentor and Senior Researcher

Tehran, Iran

October 2021 - Present

Focused on discovering novel biomarkers and neuroimaging findings in neurodegenerative diseases utilizing large-scale databases, including ADNI, PPMI, and LEMON

- **Plasma p-tau 217 as a Superior Predictor of Brain Amyloid Levels in Alzheimer's Disease**
Investigating the plasma p-tau 217 as a predictive biomarker for brain amyloid levels in Alzheimer's disease for providing less invasive and more accessible diagnostic tools compared to traditional cerebrospinal fluid (CSF) biomarkers
- **Metabolic Profiling and Structural Brain Changes in Mild Cognitive Impairment**
Indicating valine and homoarginine as protective metabolites and nitrotyrosine, p-cresol sulfate, palmitic acid, stearic acid, octadecenoic acid, dihydroxyphenylalanine, lactic acid, arachidonic acid, and indoleacetic acid as risk factors in progressing brain atrophy and structural changes

Children's Medical Center, Tehran University of Medical Sciences

Tehran, Iran

Senior Researcher; Supervisor: Prof. Mahmood Reza Ashrafi, MD

January 2022 - Present

Focused on the diagnosis of rare neurodegenerative diseases

- **Heterogeneity of manifestations of PLA2G6-associated neurodegeneration (PLAN)**
Reporting clinical findings and MRI-based imaging findings of 18 patients with infantile neuroaxonal dystrophy (INAD) and 7 cases of late-onset phospholipase-associated neurodegeneration (PLAN)
Introducing 9 novel variants of PLAN
- **Miglustat therapy in GM2 gangliosidosis (NCT03822013)**
Using miglustat as a potential early treatment for GM2 gangliosidosis and assessing the safety and efficacy of miglustat in infantile patients with Sandhoff and Tay-Sachs disease
- **First national registry for patients with spinal muscular atrophy (SMA)**
Establishing the first national registry of SMA in Iran, providing data of approximately 1000 patients with SMA
Call for contributions in the Middle Eastern region countries to expand the registries for SMA as a necessary bridge for providing early diagnosis and early interventions with available disease-modifying treatments

Gene Therapy Research Center, Shariati Hospital, Tehran University of Medical Sciences

Tehran, Iran

Visiting scholar; Supervisor: Dr. Vahid Mansouri, MD

June 2023 - Present

Hands-on experience in the AAV-based gene therapies for rare neurological disorders, such as spinal muscular atrophy, with a focus on *in vitro* and pre-clinical studies

Child Growth and Development Research Center, Isfahan University of Medical Sciences

Isfahan, Iran

Postdoctoral Researcher; Supervisor: Prof. Roya Kelishadi, MD

January 2020 - January 2022

Focused on neurodevelopmental disorders and child growth and development

- **PERSIAN Birth Cohort Study** (Collaboration with Kings College of London, UK, and Tehran University of Medical Sciences, Iran)
Leading the neurodevelopment team of the national PERSIAN Birth Cohort study, the first birth cohort in Iran to identify protective and risk factors for child development using longitudinal data
Discovering the association between parenting intervention and cognitive score based on Bayley Scales of Infant and Toddler Development (BSID) and anxiety/depression score based on Child Behavioral Checklist (CBCL)

PROFESSIONAL SKILLS

Clinical Skills

- Patient assessment & neurological examination including cognitive, behavioral and motor assessments (e.g. MMSE, ADAS, CDR, UPDRS, CHOP-INTEND, Hammersmith Functional Motor Scale, INAD-RS, CBCL, ECBQ, BSID)
- Experience in large cohort studies, clinical trial coordination, protocol development, data collection, and CRF completion.

Data Analysis and Bioinformatics

- Proficient in statistical analysis using SPSS and GraphPad Prism.
- Currently attaining proficiency in Python and R (i.e., feature selection, mediation analysis, multiple linear regression, etc.).
- Currently attaining proficiency in FreeSurfer, FSL, and DSI Studio

Research and Academic Skills

- Experience in large cohort studies, clinical trial coordination, protocol development, data collection, and CRF completion.

Molecular and Cellular Techniques

- **Molecular Biology:** Proficient in cloning, plasmid design/preparation, PCR (RT-PCR, qPCR), RNA/DNA extraction, SDS-PAGE, western blotting, and immunohistochemistry.
- **Cell Culture:** Skilled in mammalian cell culture maintenance, bacterial transformation, and culture.

Animal Models and In Vivo Techniques

- Proficient in animal surgery, mice injections (IV, IP, SC), and neuromuscular/behavioral assessments.
- Skilled in necropsy, specimen collection, and animal welfare management.

Software and Technical Proficiencies

- Proficient in Microsoft Office Suite, Google Workspace, BioRender, and Adobe Photoshop/Illustrator.
- Skilled in data visualization and database management tools.

Soft Skills

- Strong project management, leadership, and teamwork abilities in multidisciplinary research teams.
- Exceptional communication skills for diverse audiences.
- Proficient in problem-solving and experimental troubleshooting.

Language

- Persian (Native speaker), English (full professional proficiency)

TEACHING AND MENTORING EXPERIENCE

Mentored MD and PhD students, *NeuroTRACT Association, Tehran University of Medical Sciences* October 2021 - Present
Over 200 hours of mentoring several groups of enthusiastic researchers in the field of neuroscience and neuroimaging

AWARDS AND MEMBERSHIP

Awards

- Ranked 80th in the Iranian University Entrance Exam (Top 0.2%) August 2012
- Ranked among the top medical graduates in Iran October 2019

Professional Memberships

- Junior Associate Member, *International Headache Society* January 2023 - Present
- GBD Senior Collaborator, *Institute for Health Metrics and Evaluation (IHME)* June 2022 - Present
- Scientific Advisory Board, *Universal Scientific Education and Research Network (USERN)* May 2022 - Present

GRANTS AND FUNDING

2500\$- Pioneering Grant, IUMS, Developing a mobile application for child development **PI** - December 2023 – Present
1000\$- Research Fellowship Grant, IUMS, FTO gene and behaviors **PI** - April 2023 – Present
1000\$- Innovation Grant, IUMS, Miglustat therapy in GM2 gangliosidosis **PI** - June 2022 - September 2023

PROFESSIONAL DEVELOPMENT AND TRAINING

- **Python for Everybody Specialization**, Coursera, University of Michigan February 2024-Present
Introduced fundamental programming concepts including data structures, and databases using Python.
- **Comprehensive Neuroscience Diploma**, Tehran University of Medical Sciences July 2022
Covered principles of basic neuroscience
- **Principles of fMRI 1 and 2**, Coursera, Johns Hopkins University September 2022
Introduced principles of fMRI
- **Randomized Clinical Trial – Good Clinical Practice**, Tehran University of Medical Sciences March 2022
Explored fundamentals of Good Clinical Practice (GCP) in the implementation of clinical trials
- **Wet Lab Skills Workshops** 2019- 2021
Participated in workshops on cell culture, PCR, real-time PCR, Western blot, and bioinformatics techniques
- **Principles of Animal Studies**, Tehran University of Medical Sciences January 2022
Covered fundamental principles of conducting animal studies

REFERENCES

Dr. Seyed Ahmad Sajjadi, MD, PhD

Associate Professor of Neurology and Pathology, UCI Health, Irvine, USA

Email: ssajjadi@hs.uci.edu

Prof. Mahmoudreza Ashrafi, MD

Professor of Child Neurology, Tehran University of Medical Sciences, Tehran, Iran

Email: mr_ashrafi@yahoo.com , ashrafim@tums.ac.ir

Dr. Alireza Tavasoli, MD

Clinical Research Fellow, Phoenix Children's Hospital, 1919 East Thomas Road, Phoenix, AZ, USA

Email: alirezatavasoli236@gmail.com

Dr. Mohammad Hadi Aarabi, PhD

Senior researcher, University of Padova, Padua, Italy

Email: mohammadhadiarabi@gmail.com

Prof. Roya Kelishadi, MD

Professor of Pediatrics, Isfahan University of Medical Sciences, Isfahan, Iran

Email: roya.kelishadi@gmail.com , kelishadi@med.mui.ac.ir