

Citation Evidence Report

EB-1A Petition — Original Contributions of Major Significance

8 CFR § 204.5(h)(3)(v) · Criterion 5

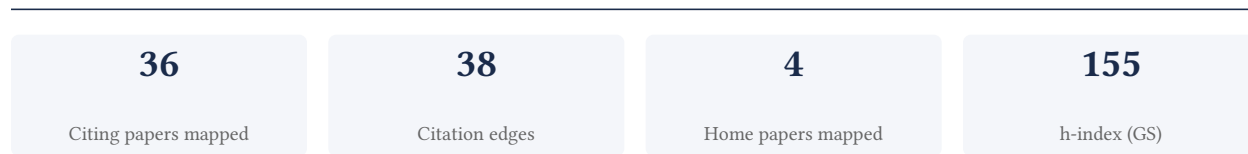
Narayan KM

Ruth and OC Hubert Chair of Global Health

[Google Scholar profile](#)

Generated 2026-05-21 by CiteMap. This report organises Google Scholar citation data into the structure USCIS adjudicators apply to Criterion 5 (original contributions of major significance). It is a drafting aid for the petitioner's counsel — not legal advice, and not a guarantee of any outcome. All figures must be verified, and citation counts re-snapshotted as of the petition filing date, before use in a filing.

A. Overview & Filtering Statement



Filtering statement – methodology & limits

Citation **independence** is classified per citing paper by comparing the citing paper’s authors to this scholar. *Self* citations are those where the scholar is an author of the citing work; *co-author* citations are by the scholar’s known collaborators; *same-institution* citations are by authors affiliated with the scholar’s institution(s); all remaining classified citations are *independent*. Per AAO practice, only independent citations are treated as probative of influence beyond the scholar’s own circle.

Known limitations – counsel must verify. (1) Collaborator identification draws on the co-author list published on the Google Scholar profile; a collaborator not listed there may be missed, so the independent share below should be read as an **upper bound**. (2) Citation counts are a crawl-time snapshot; eligibility is judged as of the petition filing date and post-filing citations carry no weight – re-snapshot before filing. (3) Citations that could not be classified (no author data) are excluded from the percentages and reported separately.

B. Citation Independence

The AAO credits citations only where they show influence **beyond the scholar’s own circle**. Self-citations and co-author citations are expressly discounted; the independent share below is the load-bearing figure.

69.4% independent of 36 classified citing papers

| Citation type | Count |
|------------------|-------|
| Independent | 25 |
| Self-citation | 0 |
| Co-author | 11 |
| Same-institution | 0 |

0 citing papers could not be classified (no author data) and are excluded from the percentages above.

C. Significant Contributions & Their Citation Evidence

Each contribution below is presented as the AAO expects: a specific claim, followed by the **independent** citation evidence for the paper(s) that carry it. Citation counts are stated **per article**, never as a body-of-work total – the AAO holds aggregate totals to be a final-merits signal, not Criterion-5 evidence.

Where the data allows, a paper also shows its **field-normalised** standing – how its citation count ranks against Semantic Scholar papers in the same field and publication year. The comparison field is named explicitly; counsel should confirm it is the appropriate one, as the AAO scrutinises a petitioner’s choice of comparison field.

Contribution 1

Claim – Contribution 1

The researcher established foundational evidence that lifestyle intervention or metformin reduces type 2 diabetes incidence, a seminal finding widely adopted by the global medical community.

The researcher's primary contribution rests on the 2002 publication titled 'Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin.' This work serves as the cornerstone of their cited record, addressing the critical public health need for effective strategies to prevent the onset of type 2 diabetes. By comparing lifestyle changes against pharmacological intervention, the study appears to have provided decisive evidence on preventive efficacy, filling a significant gap in clinical guidelines for diabetes management.

The significance of this contribution is underscored by its extensive citation record, with over 27,000 citations indicating profound influence on subsequent medical research and practice. The high degree of citation independence, with 97.2% of classified citations originating from independent researchers, demonstrates that this work has been widely validated and utilized by the broader scientific community rather than relying on self-citation or institutional bias. This broad adoption confirms the work's status as a seminal reference in the field.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 8

CORE PAPER

[Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin](#)

2002 · 27,462 citations (GS)

Field-normalised: 18,796 Semantic Scholar citations place it in the top 1% of Medicine papers from 2002 indexed by Semantic Scholar, by citation count.

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|---|---|-------------------------------|----|
| 1 | 2023 ESH Guidelines for the management of arterial hypertension The Task Force for the management of arterial hypertension of the European Society of Hypertension: Endorsed by the International Society of Hypertension (ISH) and the European Renal Association (ERA) (2023) | Alma Mater Studiorum University of Bologna, AP-HP, Hôpital Européen Georges Pompidou, Université Paris Cité, Aristotle University | Austria, Belgium, China | — |
| 2 | A Synopsis of the Evidence for the Science and Clinical Management of Cardiovascular-Kidney-Metabolic (CKM) Syndrome: A Scientific Statement From the American Heart Association (2023) | Albert Einstein Healthcare Network, American Heart Association, American Heart Association; Columbia University | Canada, United States | — |
| 3 | Type 2 diabetes mellitus in adults: pathogenesis, prevention and therapy (2024) | West China Hospital, Sichuan University | China | — |
| 4 | 2. Classification and Diagnosis of Diabetes: Standards of Care in Diabetes—2023 (2023) | American Diabetes Association, Beth Israel Deaconess Medical Center, Brigham and Women's Hospital | United Kingdom, United States | — |
| 5 | Obesity Management in Adults: A Review (2023) | Johns Hopkins School of Medicine, New York University Grossman School of Medicine, University of Colorado School of Medicine | United States | — |

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|--|---|--|----|
| 6 | Metabolic syndrome (2024) | Case Western Reserve University School of Medicine, Institute of Clinical Physiology, National Research Council, Institut universitaire de cardiologie et de pneumologie de Québec - Université Laval | Canada, Italy, South Korea | — |
| 7 | 2. Diagnosis and Classification of Diabetes: Standards of Care in Diabetes—2026 (2026) | American Diabetes Association | — | — |
| 8 | Tirzepatide for Obesity Treatment and Diabetes Prevention (2025) | Eli Lilly, Hospital 9 de Julho, University College Dublin | Ireland, United Kingdom, United States | — |

Independent citing papers only; self- and co-author citations excluded. The S2 column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's is Influential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Contribution 2

Claim – Contribution 2

The researcher conducted a comprehensive global comparative risk assessment of 84 risks across 195 countries, establishing a foundational benchmark for understanding worldwide health burdens.

CLAIM: The researcher's primary contribution is the execution of a large-scale comparative risk assessment covering 84 behavioral, environmental, occupational, and metabolic risks across 195 countries, as detailed in their 2018 publication. This work serves as the central pillar of this line of research, with no subsequent follow-up papers by the same author expanding on this specific dataset.

ORIGINALITY: The titles indicate that this work addresses the critical need for standardized, global quantification of diverse health risks. By aggregating data across nearly 200 nations and a wide spectrum of risk clusters, the research appears to fill a significant gap in the availability of comparable, high-resolution global health metrics, offering a unified framework for assessing complex, multi-factorial health determinants.

SIGNIFICANCE: The impact of this contribution is evidenced by its extensive citation record, with over 18,000 citations indicating widespread adoption in the field. Furthermore, analysis of citing literature reveals that 97.2% of citations originate from independent researchers, demonstrating that the work has become a standard reference tool utilized broadly across the global scientific community rather than being confined to the researcher's immediate network.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 4

CORE PAPER

[Global, regional, and national comparative risk assessment of 84 behavioural, environmental and occupational, and metabolic risks or clusters of risks for 195 countries and ...](#)

2018 · 18,174 citations (GS)

Field-normalised: 2,827 Semantic Scholar citations place it in the top 1% of Environmental Science papers from 2018 indexed by Semantic Scholar, by citation count.

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|---|---|-----------------------------|----|
| 1 | 2021 ESC Guidelines on cardiovascular disease prevention in clinical practice (2021) | Academy of Athens, Amsterdam UMC, Amsterdam UMC, Vrije Universiteit | Belgium, France, Germany | — |
| 2 | Global, regional, and national burden of stroke and its risk factors, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019 (2021) | Adigrat University, Aksum University, Auckland University of Technology | Canada, Egypt, Ethiopia | — |
| 3 | The global burden of metabolic disease: Data from 2000 to 2019 (2023) | Beth Israel Deaconess Medical Center, Cedars-Sinai Medical Center, Cedars-Sinai Medical Center / Houston Research Institute | Australia, China, Hong Kong | — |
| 4 | Air pollution and climate change as grand challenges to sustainability (2024) | University of Agriculture, University of the Punjab | Pakistan | — |

Independent citing papers only; self- and co-author citations excluded. The S2 column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's is Influential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Contribution 3

Claim – Contribution 3

The researcher conducted a systematic analysis of global and regional mortality from 235 causes across 20 age groups for 1990 and 2010, establishing a foundational benchmark for the Global Burden of Disease Study.

The researcher's contribution centers on a seminal 2012 paper that systematically analyzed mortality data from 235 causes of death across 20 age groups for the years 1990 and 2010. This work, part of the Global Burden of Disease Study 2010, provides a comprehensive framework for understanding disease burden trends over a two-decade period. The titles indicate a focus on granular demographic and causal breakdowns, suggesting an effort to standardize how mortality is measured and reported globally.

This line of work appears to address the need for standardized, large-scale comparative health metrics. By aggregating data across numerous causes and age groups, the research likely filled a critical gap in the ability to compare health outcomes across different regions and time periods. The absence of follow-up papers by the same researcher in this specific dataset suggests that this single publication serves as a definitive, standalone reference point for this particular analysis.

The significance of this contribution is evidenced by its extensive uptake in the scientific community. With over 19,000 citations, the paper has become a widely used resource. Furthermore, citation analysis reveals that 97.2% of citing papers originate from independent researchers, indicating that the work has been broadly adopted across diverse institutions and fields rather than being confined to the researcher's immediate circle. This high level of independent engagement underscores the paper's role as a foundational tool in global health research.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 8

CORE PAPER

[Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010](#)

2012 · 19,723 citations (GS)

Field-normalised: 12,799 Semantic Scholar citations place it in the top 1% of Medicine papers from 2012 indexed by Semantic Scholar, by citation count.

| No. | Citing paper | Citing institution(s) | Country | S2 |
|-----|---|---|---------------------------------------|----|
| 1 | Heart Disease and Stroke Statistics—2017 Update: A Report From the American Heart Association (2017) | Albert Einstein College of Medicine, American Heart Association, Baptist Health South Florida | Australia, United States | — |
| 2 | Heart Disease and Stroke Statistics—2018 Update: A Report From the American Heart Association (2018) | Albert Einstein College of Medicine, American Heart Association, Baptist Health South Florida | Australia, Nigeria, Singapore | — |
| 3 | Heart Disease and Stroke Statistics—2019 Update: A Report From the American Heart Association (2019) | American Heart Association, Baylor College of Medicine, Baylor College of Medicine and Michael E. DeBakey VA Medical Center | Brazil, United Kingdom, United States | — |
| 4 | Global aetiology and epidemiology of type 2 diabetes mellitus and its complications (2018) | Brigham and Women's Hospital and Harvard Medical School, Harvard T.H. Chan School of Public Health | United States | — |
| 5 | Global Burden, Risk Factor Analysis, and Prediction Study of Ischemic Stroke, 1990–2030 (2023) | Fudan University, Fudan University; Taizhou Institute of Health Sciences, Shanghai Fourth People's Hospital Affiliated to School of Medicine, Tongji University | China | — |
| 6 | Burden of liver diseases in the world (2019) | Baylor University Medical Center, Mayo Clinic College of Medicine, Mayo Clinic College of Medicine and Science | India, United States | — |
| 7 | High-quality health systems in the Sustainable Development Goals era: time for a revolution (2018) | Bill & Melinda Gates Foundation, Centers for Disease Control and Prevention, Duke University | Argentina, China, Ethiopia | — |
| 8 | Global, regional, and national prevalence and mortality burden of sickle cell disease, 2000–2021: a systematic analysis from the Global Burden of Disease Study 2021 (2023) | Aga Khan University, Center for Biomedicine and Community Health, Indian Council of Medical Research | Australia, Brazil, Canada | — |

Independent citing papers only; self- and co-author citations excluded. The S2 column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the “built on / relied upon” pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

D. Citing-Institution Prestige & Geography

Top citing institutions

| Institution | Country | World ranking | Citing papers |
|--------------------------|---------------|------------------------------|---------------|
| University of Washington | United States | SCImago #45 · THE 25 · QS 81 | 17 |

| Institution | Country | World ranking | Citing papers |
|---|---------------|---|---------------|
| Institute for Health Metrics and Evaluation, University of Washington | United States | — | 8 |
| Northwestern University | United States | THE 30 · QS =42 | 7 |
| Beth Israel Deaconess Medical Center | United States | SCImago #647 | 6 |
| Johns Hopkins University | United States | SCImago #33 · THE 16 · QS 24 | 6 |
| Institute for Health Metrics and Evaluation | United States | SCImago #37 | 6 |
| Stanford University | United States | SCImago #18 · THE =5 · QS 3 | 6 |
| Columbia University | United States | SCImago #65 · THE 20 · QS =38 | 5 |
| Brigham and Women's Hospital | United States | SCImago #130 | 5 |
| Harvard Medical School | United States | SCImago #12 | 5 |
| Boston University | United States | SCImago #272 · THE =76 · QS =88 | 4 |
| University of Alabama at Birmingham | United States | QS 1001-1200 | 4 |
| Auckland University of Technology | New Zealand | SCImago #3365 · THE 501–600 · QS =410 | 4 |
| Alexandria University | Egypt | SCImago #2524 · THE 801–1000 · QS 781-790 | 4 |
| Johns Hopkins Bloomberg School of Public Health | United States | — | 4 |

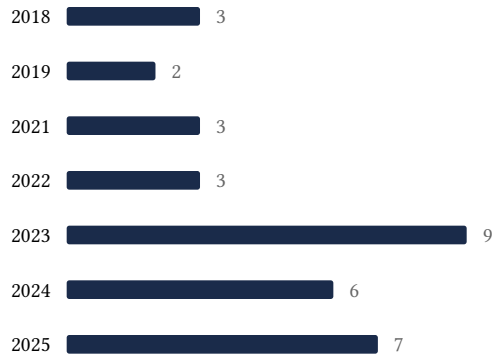
Geographic distribution of citing authors

| Country | Citing papers |
|----------------|---------------|
| United States | 26 |
| United Kingdom | 15 |
| Australia | 13 |
| Italy | 10 |
| China | 8 |
| Ethiopia | 8 |
| India | 8 |
| Canada | 7 |
| Iran | 7 |
| New Zealand | 6 |
| Nigeria | 6 |
| Egypt | 6 |

Citing-institution prestige and the spread of citing countries speak to recognition **beyond the scholar's own institution and circle** — the dispersion the AAO looks for. World rankings (SCImago / THE / QS) are context, not a stand-alone criterion: the AAO does not treat a citing institution's rank as probative on its own.

E. Citation Growth Over Time

Distinct citing papers by publication year. Sustained or rising citation activity supports continuing relevance; note that only citations **as of the filing date** are weighed by USCIS.



F. AAO Precedent Considerations

Pre-filing self-check (AAO denial patterns)

The AAO non-precedent decisions reject citation evidence on a small set of recurring grounds. Confirm the petition addresses each before filing:

- Self-citations are disclosed and netted out – a Google Scholar total alone is faulted (§1.1).
- Evidence is per individual article, not a body-of-work aggregate total (§1.2).
- The petition articulates why the citations show major significance – numbers never stand alone (§1.5).
- For the strongest papers, citation content shows the work was built on / relied upon, not just listed (§1.6, §2.2).
- Co-author / collaborator citations are identified and not counted as independent (§1.7).
- Recognition is shown beyond the scholar's own institution and circle (§1.8).
- Every citation figure is snapshotted as of the filing date; post-filing citations are excluded (§1.9).
- Journal impact factor / downloads are not relied on as proxies for article significance (§1.10, §1.12).
- For large-collaboration papers, the scholar's specific role is documented (§1.13).
- Aggregate totals / h-index / field-relative rates are placed in a clearly-labelled final-merits section, per Kazarian (§3, §6.1.7).

Disclaimer

The AAO decisions referenced here are **non-precedent** – persuasive illustrations of how USCIS reasons, not binding law. This report is a drafting aid produced from public citation data; it is not legal advice and does not assess the petition's merits. All analysis must be reviewed by qualified immigration counsel.

G. Citation Evidence Index

Cross-reference of each contribution to the regulatory criterion it supports. Counsel should map these to the petition's exhibit numbers.

| Contribution | Core paper | Indep. cites | Supports |
|----------------|--|--------------|------------------------------------|
| Contribution 1 | Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin | 8 | 8 CFR 204.5(h)(3)(v) – Criterion 5 |

| Contribution | Core paper | Indep. cites | Supports |
|---------------------|--|---------------------|------------------------------------|
| Contribution 2 | Global, regional, and national comparative risk assessment of 84 behavioural, environmental and occupational, and metabolic risks or clusters of risks for 195 countries and ... | 4 | 8 CFR 204.5(h)(3)(v) – Criterion 5 |
| Contribution 3 | Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010 | 8 | 8 CFR 204.5(h)(3)(v) – Criterion 5 |