

# *Overview of recent research papers in childhood tuberculosis*

Child and Adolescent Tuberculosis Working Group  
16<sup>th</sup> October 2020

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**Child & Adolescent  
TB Working Group**



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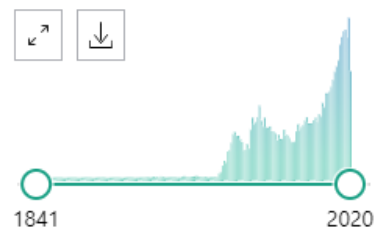
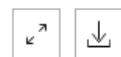
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RESULTS BY YEAR



TEXT AVAILABILITY

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ARTICLE ATTRIBUTE

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ARTICLE TYPE

☐ 1 [Implementing contact tracing for \*\*tuberculosis\*\* in Kyrgyz Republic and risk factors for positivity using QuantiFERON-TB Gold plus.](#)

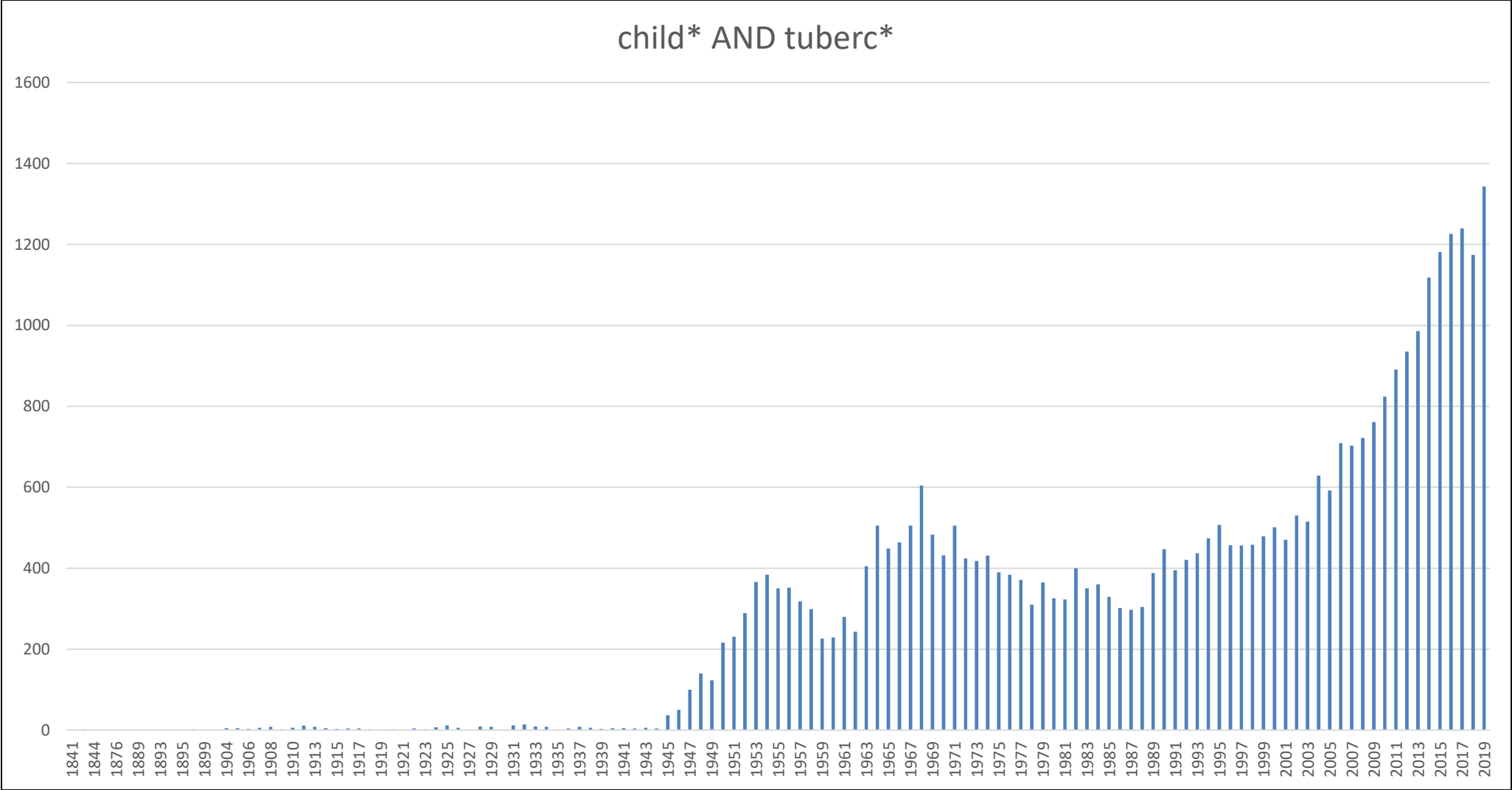
Cite Corbett C, Kulzhabaeva A, Toichkina T, Kalmambetova G, Ahmedov S, Antonenka U, Iskakova A, Kosimova D, Migunov D, Myrzaliev B, Sahalchik E, Umetalieva N, Vogel M, Kadyrov A, Hoffmann H.  
Share BMC Infect Dis. 2020 Oct 12;20(1):746. doi: 10.1186/s12879-020-05465-x.  
PMID: 33046016

BACKGROUND: Effective active case finding (ACF) activities are essential for early identification of new cases of active **tuberculosis** (TB) and latent TB infection (LTBI). ...When stratified by age, association with smear positivity disappeared for **children** below 15 ...

☐ 2 [Coexistence of genital \*\*tuberculosis\*\* and ovarian serous cystadenofibroma in a young female patient: a case report.](#)

Cite Yang S, Yang Z, Zhang S, Len T, Yang L.  
Share J Int Med Res. 2020 Oct;48(10):300060520949410. doi: 10.1177/0300060520949410.  
PMID: 33045892

Polymerase chain reaction for Mycobacterium **tuberculosis** and acid-fast bacilli culture were positive in biopsies of the fallopian tubes, omentum, and peritoneum. ...During surgery, even if the lesion is similar to a malignant tumor, the surgical approach needs to be cautio ...





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RESULTS BY YEAR



2019-2020

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☐ **Implementing contact tracing for tuberculosis in Kyrgyz Republic and risk factors for positivity using QuantiFERON-TB Gold plus.**

1  
Cite Corbett C, Kulzhabaeva A, Toichkina T, Kalmambetova G, Ahmedov S, Antonenka U, Iskakova A, Kosimova D, Migunov D, Myrzaliev B, Sahalchik E, Umetalieva N, Vogel M, Kadyrov A, Hoffmann H.  
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TEXT AVAILABILITY

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☐ Full text

ARTICLE ATTRIBUTE

- ☐ Associated data

ARTICLE TYPE

- ☐ Books and Documents

# My biases

- 1126 studies identified on PubMed
- On review of title selected 90 that I thought looked interesting
- Lots of papers on COVID-19+TB and on BCG!!
- Only given 15 minutes this year!!
- Review of abstracts brought down to 22
- PLEASE forgive me if I have not included your paper!!!
- PLEASE forgive me if I do a terrible job of summarising your work in 1 minute!



"A WORLD WITHOUT BIAS  
IS TOO HARD. WOULD YOU  
SETTLE FOR WORLD PEACE?"

# *Epidemiology*

RESEARCH ARTICLE


## The age-specific burden and household and school-based predictors of child and adolescent tuberculosis infection in rural Uganda

Carina Marquez<sup>1</sup>\*, Mucunguzi Atukunda<sup>2</sup>, Laura B. Balzer<sup>3</sup>, Gabriel Chamie<sup>1</sup>, Joel Kironde<sup>2</sup>, Emmanuel Ssemmondo<sup>2</sup>, Theodore D. Ruel<sup>4</sup>, Florence Mwangwa<sup>2</sup>, Khai Hoan Tram<sup>5a</sup>, Tamara D. Clark<sup>1</sup>, Dalsone Kwarisima<sup>2,6</sup>, Maya Petersen<sup>7</sup>, Moses R. Kanya<sup>2,6</sup>, Edwin D. Charlebois<sup>8</sup>, Diane V. Havlir<sup>1</sup>

## The risk of tuberculosis in children after close exposure: a systematic review and individual-participant meta-analysis

*Leonardo Martinez, Olivia Cords, C Robert Horsburgh, Jason R Andrews, Pediatric TB Contact Studies Consortium\**

# Profiling *Mycobacterium tuberculosis* transmission and the resulting disease burden in the five highest tuberculosis burden countries

Romain Ragonnet<sup>1,2,3\*</sup> , James M. Trauer<sup>2,4</sup>, Nicholas Geard<sup>5,6</sup>, Nick Scott<sup>2,3</sup> and Emma S. McBryde<sup>1,7</sup>

## Children as sentinels of tuberculosis transmission: disease mapping of programmatic data

Kenneth S. Gunasekera<sup>1</sup>, Jon Zelner<sup>2</sup>, Mercedes C. Becerra<sup>3</sup>, Carmen Contreras<sup>4</sup>, Molly F. Franke<sup>3</sup>, Leonid Lecca<sup>3,4</sup>, Megan B. Murray<sup>3</sup>, Joshua L. Warren<sup>5†</sup> and Ted Cohen<sup>1\*†</sup>





# *Diagnostics*

RESEARCH ARTICLE

# Upfront Xpert MTB/RIF for diagnosis of pediatric TB—Does it work? Experience from India

Aakshi Kalra<sup>1\*</sup>, Debadutta Parija<sup>1</sup>, Neeraj Raizada<sup>1</sup>, K. S. Sachdeva<sup>2</sup>, Raghuram Rao<sup>2</sup>, Soumya Swaminathan<sup>3</sup>, Ashwani Khanna<sup>4</sup>, Kamal Kishore Chopra<sup>5</sup>, M. Hanif<sup>5</sup>, Varinder Singh<sup>6</sup>, K. R. Umadevi<sup>7</sup>, K. N. Sheladia<sup>8</sup>, Rama Rao<sup>9</sup>, N. Vasundhara<sup>10</sup>, Anil S.<sup>11</sup>, Nirmala A. R.<sup>11</sup>, Abdul Azeem<sup>11</sup>, Vijay Chhajlani<sup>12</sup>, Jyoti Khurana<sup>13</sup>, N. J. Das<sup>14</sup>, Bandana Choudhury<sup>15</sup>, Sreenivas Achuthan Nair<sup>16</sup>, Shalini Mall<sup>1</sup>, Rajashree Sen<sup>1</sup>, Sarabjit Singh Chadha<sup>1</sup>, Claudia M. Denkinge<sup>17</sup>, Catharina Boehme<sup>17</sup>, Sanjay Sarin<sup>1</sup>

## Tuberculosis Diagnosis in Children Using Xpert Ultra on Different Respiratory Specimens

Heather J. Zar<sup>1</sup>, Lesley J. Workman<sup>1</sup>, Margaretha Prins<sup>1</sup>, Linda J. Bateman<sup>1</sup>, Slindile P. Mbhele<sup>2</sup>, Cynthia B. Whitman<sup>1</sup>, Claudia M. Denkinge<sup>3,4</sup>, and Mark P. Nicol<sup>2,5</sup>

## A three-marker protein biosignature distinguishes tuberculosis from other respiratory diseases in Gambian children

Toyin Togun<sup>a,b,\*</sup>, Clive J. Hoggart<sup>c,d</sup>, Schadrac C. Agbla<sup>e,f</sup>, Marie P. Gomez<sup>a</sup>, Uzochukwu Egere<sup>g</sup>, Abdou K. Sillah<sup>a</sup>, Binta Saïdy<sup>a</sup>, Francis Mendy<sup>a</sup>, Madhukar Pai<sup>h,i</sup>, Beate Kampmann<sup>a,b,\*</sup>

## PEDIATRIC ENDOBRONCHIAL ULTRASOUND- TRANSBRONCHIAL NEEDLE ASPIRATION UNDER CONSCIOUS SEDATION FOR SUSPECTED TUBERCULOSIS IN LONDON

*Mirae Park, MBBS, BSc,\* Harriet Owles, MBBS, MA,\*  
Amanda Williams, MBBS,† Bhanu Williams, BM BS,†  
Elizabeth Whittaker, MB BCh,\*  
and Onn Min Kon, MD, FRCP\**

*Therapeutics*

# A Randomized Controlled Trial of Isoniazid to Prevent *Mycobacterium tuberculosis* Infection in Kenyan Human Immunodeficiency Virus–Exposed Uninfected Infants

Sylvia M. LaCourse,<sup>1,2,☯</sup> Barbra A. Richardson,<sup>2,3</sup> John Kinuthia,<sup>4,5</sup> A. J. Warr,<sup>6</sup> Elizabeth Maleche-Obimbo,<sup>7</sup> Daniel Matemo,<sup>4</sup> Lisa M. Cranmer,<sup>8,9</sup> Jerphason Mecha,<sup>4</sup> Jaclyn N. Escudero,<sup>2,☯</sup> Thomas R. Hawn,<sup>1</sup> and Grace John-Stewart<sup>1,2,10,11</sup>

## ORIGINAL ARTICLE

### Vitamin D Supplements for Prevention of Tuberculosis Infection and Disease

D. Ganmaa, B. Uyanga, X. Zhou, G. Gantsetseg, B. Delgerekh, D. Enkhmaa, D. Khulan, S. Ariunzaya, E. Sumiya, B. Bolortuya, J. Yanjmaa, T. Enkhtsetseg, A. Munkhzaya, M. Tunsag, P. Khudyakov, J.A. Seddon, B.J. Marais, O. Batbayar, G. Erdenetuya, B. Amarsaikhan, D. Spiegelman, J. Tsolmon, and A.R. Martineau

# Risk-benefit analysis of tuberculosis infection testing for household contact management in high-burden countries: a mathematical modelling study

*Courtney M Yuen, James A Seddon, Salmaan Keshavjee, Peter J Dodd*

## SUCCESSFUL TREATMENT OF A SEVERE VISION-THREATENING PARADOXICAL TUBERCULOUS REACTION WITH INFLIXIMAB

*FIRST PEDIATRIC USE*

*Yara-Natalie Abo, MBBS,\* Nigel Curtis, PhD,\*†‡ Coen Butters, BMed,\* Thomas H. Rozen, MBBS,\*†‡ Ben J. Marais, PhD,§¶ and Amanda Gwee, PhD\*†‡*

*HIV co-infection*

# Abacavir Exposure in Children Cotreated for Tuberculosis with Rifampin and Superboosted Lopinavir-Ritonavir

Helena Rabie,<sup>a,b</sup> Tjokosela Tikiso,<sup>c</sup> Janice Lee,<sup>d</sup> Lee Fairlie,<sup>e</sup> Renate Strehlau,<sup>f</sup> Raziya Bobat,<sup>g</sup> Afaaf Liberty,<sup>h</sup> Helen McIlleron,<sup>c</sup> Isabelle Andrieux-Meyer,<sup>d</sup> Mark Cotton,<sup>a,b</sup> Marc Lallemant,<sup>d</sup>  Paolo Denti<sup>c</sup>

## Pharmacokinetics and safety of a raltegravir-containing regimen in HIV-infected children aged 2–12 years on rifampicin for tuberculosis

Tammy Meyers<sup>a</sup>, Pearl Samson<sup>b</sup>, Edward P. Acosta<sup>c</sup>, Jack Moyo<sup>d</sup>, Ellen Townley<sup>e</sup>, Sarah Bradford<sup>f</sup>, Linda Marillo<sup>g</sup>, Kayla Denson<sup>g</sup>, Laura Hovind<sup>g</sup>, Thucuma Sise<sup>h</sup>, Hedy Teppler<sup>i</sup>, Sisinyana Ruth Mathiba<sup>j</sup>, Masebole Masenya<sup>k</sup>, Anneke Hesseling<sup>l</sup>, Mark F. Cotton<sup>m</sup>, Paul Krogstad<sup>n</sup>, for the IMPAACT P1101 Team



*Vaccines*

# BCG vaccination is associated with reduced malaria prevalence in children under the age of 5 years in sub-Saharan Africa

Mike LT Berendsen <sup>1,2,3,4</sup>, Sjors WL van Gijzel,<sup>1</sup> Jeroen Smits,<sup>5</sup> Quirijn de Mast,<sup>1</sup> Peter Aaby,<sup>4</sup> Christine S Benn,<sup>2,3</sup> Mihai G Netea,<sup>1,6,7</sup> Andre JAM van der Ven<sup>1</sup>

## Prevention of tuberculosis in macaques after intravenous BCG immunization

<https://doi.org/10.1038/s41586-019-1817-8>

Received: 11 June 2019

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Open access

Patricia A. Darrah<sup>1</sup>, Joseph J. Zeppa<sup>2</sup>, Pauline Malello<sup>2</sup>, Joshua A. Hackney<sup>1</sup>, Marc H. Wadsworth II<sup>2,4,5</sup>, Travis K. Hughes<sup>2,4,5</sup>, Supriya Pokkali<sup>1</sup>, Phillip A. Swanson II<sup>1</sup>, Nicole L. Grant<sup>6</sup>, Mark A. Rodgers<sup>2</sup>, Megha Kamath<sup>1</sup>, Chelsea M. Causgrove<sup>2</sup>, Dominick J. Laddy<sup>7</sup>, Aurelio Bonavia<sup>7</sup>, Danilo Casimiro<sup>7</sup>, Philana Ling Lin<sup>8</sup>, Edwin Klein<sup>9</sup>, Alexander G. White<sup>2</sup>, Charles A. Scanga<sup>2</sup>, Alex K. Shalek<sup>2,4,5,10</sup>, Mario Roederer<sup>1,11</sup>, JoAnne L. Flynn<sup>2,11</sup> & Robert A. Seder<sup>1,11\*</sup>

# Potential effect of age of BCG vaccination on global paediatric tuberculosis mortality: a modelling study

*Partho Roy, Johan Vekemans, Andrew Clark, Colin Sanderson, Rebecca C Harris\*, Richard G White\**

# Maternal Priming: Bacillus Calmette-Guérin (BCG) Vaccine Scarring in Mothers Enhances the Survival of Their Child With a BCG Vaccine Scar

Mike L.T. Berendsen,<sup>1,a</sup> Christian Bjerregård Øland,<sup>1,2,a</sup> Pauli Bles,<sup>1</sup> Aksel Karl Georg Jensen,<sup>2,3</sup> Poul-Erik Kofoed,<sup>4</sup> Hilton Whittle,<sup>5</sup> L. Charlotte J. de Bree,<sup>2,6</sup> Mihai G. Netea,<sup>6</sup> Cesario Martins,<sup>1</sup> Christine S. Benn,<sup>2,7</sup> and Peter Aaby<sup>1,2</sup>

*Fundamental Science*

# Infant Alveolar Macrophages Are Unable to Effectively Contain *Mycobacterium tuberculosis*

Anu Goenka<sup>1,2</sup>, Ian E. Prise<sup>1</sup>, Emma Connolly<sup>1</sup>, Paulina Fernandez-Soto<sup>1</sup>, David Morgan<sup>1</sup>, Jennifer S. Cavet<sup>1</sup>, John R. Grainger<sup>1</sup>, Jaya Nichani<sup>3</sup>, Peter D. Arkwright<sup>1†</sup> and Tracy Hussell<sup>1\*†</sup>

# Characterization of gut microbiota in children with pulmonary tuberculosis

Weiran Li<sup>1,2</sup>, Yu Zhu<sup>1,2</sup>, Qiong Liao<sup>1,2</sup>, Zhiling Wang<sup>1,2\*</sup> and Chaomin Wan<sup>1,2\*</sup> 

## Protection against mycobacterial infection: A case-control study of mycobacterial immune responses in pairs of Gambian children with discordant infection status despite matched TB exposure

Robindra Basu Roy<sup>a,b,c</sup>, Basil Sambou<sup>b</sup>, Muhamed Sissoko<sup>b</sup>, Beth Holder<sup>a,d</sup>, Marie P Gomez<sup>b</sup>, Uzochukwu Egere<sup>b,e</sup>, Abdou K Sillah<sup>b</sup>, Artemis Koukounari<sup>f</sup>, Beate Kampmann<sup>b,c,g,\*</sup>

## Advanced imaging tools for childhood tuberculosis: potential applications and research needs

*Sanjay K Jain, Savvas Andronikou, Pierre Goussard, Sameer Antani, David Gomez-Pastrana, Christophe Delacourt, Jeffrey R Starke, Alvaro A Ordonez, Patrick Jean-Philippe, Renee S Browning, Carlos M Perez-Velez*

# Conclusions

- Number of publications increasing, many of high quality
- Lots of BCG papers this year
- Multiple papers on COVID-TB, including in children
- Good geographical variation

