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# Applying the proportionality principle to COVID-19 antibody testing

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## ABSTRACT

As the COVID-19 pandemic continues to ravage the globe, many nations have started to relax stringent restrictions in an effort to restart the economy. While Member States of the European Union have approached reopening without the use of antibody testing for COVID-19, such testing may be central to a long-term, sustainable strategy for international travel, employment, and the allocation and monitoring of vaccines. As the use of antibody testing to dictate the enjoyment of individual freedom remains highly controversial, we describe its use in the context of three case studies (return to the workplace, travel and vaccination), applying the substantive legal balancing entailed in the proportionality principle. Differential treatment of individuals based on COVID-19 antibody test results can be justified through the proportionality principle, which offers a sound dividing line between a reasonable and legitimate response and an unjust and discriminatory response.

**KEYWORDS:** COVID-19, proportionality, antibody testing, civil rights, vaccines

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## I. INTRODUCTION

‘Those with antibodies will be able to travel and work, and the rest will be discriminated against.’

—Dr David Nabarro, a World Health Organization Special Envoy on COVID-19<sup>1</sup>.

Although the COVID-19 pandemic continues to ravage the globe, many nations are loosening stringent lockdown measures to reboot the economy, while exploring approaches to prevent the resurgence of the disease.<sup>2</sup> Antibody testing, which consists of a blood test confirming the presence of immune response to COVID-19, has been proposed by some as a solution to stringent lockdowns and border closures.<sup>3,4,5</sup> The World Health Organization has recently cautioned against sole dependence on antibody testing, since ‘there is currently no evidence that people who have recovered from COVID-19 and have antibodies are protected from a second infection.’<sup>6</sup> Countries seem to be following this advice, already opening borders and restarting their economies without sole reliance on this method. For instance, the European Union has issued guidelines for EU Member States seeking to lift travel restrictions without mention of antibody testing.<sup>7</sup>

Though more research is needed, antibody testing may eventually be useful in identifying people who have been previously infected with—and confirming immunity in those who have been vaccinated against—COVID-19.<sup>8</sup> Though ethical issues remain,<sup>9,10</sup> if COVID-19 remains endemic in certain parts of the world, antibody testing may be part of a long-term strategy for international travel or employment, particularly between nations with disparate disease prevalence rates.

As the world holds its collective breath for a vaccine, individuals with immunity to COVID-19—either via exposure and recovery or via vaccine (should one become available)—would be permitted to resume their daily lives whereas others remain home

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- 1 Donald G. McNeil Jr, *The Coronavirus in America: The Year Ahead*, THE NEW YORK TIMES, April 18, 2020, <https://www.nytimes.com/2020/04/18/health/coronavirus-america-future.html> (last visited Jul. 4, 2020).
  - 2 Joint European Roadmap towards lifting COVID-19 containment measures, [https://ec.europa.eu/info/sites/info/files/communication\\_-\\_a\\_european\\_roadmap\\_to\\_lifting\\_coronavirus\\_containment\\_measures\\_0.pdf](https://ec.europa.eu/info/sites/info/files/communication_-_a_european_roadmap_to_lifting_coronavirus_containment_measures_0.pdf) (last visited Jul. 4, 2020).
  - 3 Jennifer Abbasi, *The Promise and Peril of Antibody Testing for COVID-19*, 323 JAMA 1881–1883 (2020).
  - 4 David Cox, *Can antibody testing deliver on promises to lift the lockdown?*, THE OBSERVER, May 10, 2020, <https://www.theguardian.com/world/2020/may/10/can-antibody-testing-deliver-on-promise-to-lift-the-lockdown> (last visited Jul. 4, 2020).
  - 5 With Broad, Random Tests for Antibodies, Germany Seeks Path Out of Lockdown—The New York Times, <https://www.nytimes.com/2020/04/18/world/europe/with-broad-random-tests-for-antibodies-germany-seeks-path-out-of-lockdown.html> (last visited Jul. 4, 2020).
  - 6 ‘Immunity passports’ in the context of COVID-19, <https://www.who.int/news-room/commentaries/detail/immunity-passports-in-the-context-of-covid-19> (last visited Jul. 4, 2020).
  - 7 Communication from the Commission Guidelines on the progressive restoration of transport services and connectivity—COVID-19, 63 OFF. J EUR. UNION 17–29 (2020).
  - 8 Sara Gerke, *Germany’s Response to the COVID-19 Pandemic*, BILL OF HEALTH (2020), <http://blog.petrieflom.law.harvard.edu/2020/05/18/germany-global-responses-covid19/> (last visited Jul. 4, 2020).
  - 9 Govind Persad & Ezekiel J. Emanuel, *The Ethics of COVID-19 Immunity-Based Licenses* (‘Immunity Passports’), 323 JAMA 2241–2242 (2020).
  - 10 Henry T. Greely, *Covid-19 ‘immunity certificates’: practical and ethical conundrums*, STAT (2020), <https://www.statnews.com/2020/04/10/immunity-certificates-covid-19-practical-ethical-conundrums/> (last visited Jul. 4, 2020).

in order to avoid infection and mitigate spread. For some, this may affect freedom of movement, including the freedom to go to work and to travel, both domestically and internationally. We argue that any approach that infringes upon civil rights such as free movement must be based on the principle of proportionality, which involves procedural legal balancing, a necessary framework for the equally important substantive legal balancing. Although different takes on the proportionality principle exist throughout Europe, the German approach has been particularly influential.<sup>11</sup> Through three case studies focusing on Europe, we introduce the application of substantive legal balancing as the necessary approach to reach a consensus for cautious and evidence-based use of antibody testing.

## II. A CALL FOR PROPORTIONALITY

Antibody testing may provide a powerful tool in responding to the COVID-19 pandemic without excessively affecting civil rights. If applied in line with proportionality principle, antibody testing might assist in the development and fine-tuning of a sustained restart of our collective economies and societies with minimal damage and maximum utilitarian benefit. Yet for antibody testing to become a well-accepted and legitimate tool to tailor the lifting of restrictions, consensus is needed for high-quality standards of antibody testing for immunity. Availability, accessibility, affordability, legality, and public acceptance need to be considered and accounted for both at the regional and global levels.<sup>12</sup> Any approach to lawfully achieving these goals must involve an assessment based on the proportionality principle.

Many regional and constitutional courts invoke balancing as a method in adjudication of (conflicting) human and fundamental rights issues. In Europe, the proportionality principle is applied by the European Court of Human Rights and the Court of Justice of the European Union.<sup>13</sup> National courts may also apply their own variation of the proportionality principle.<sup>14</sup> The German Federal Constitutional Court, for example, may apply the ‘principle of practical concordance’, in the case of conflicting constitutional rights. The principle requires that a conflict-solving process assess the

11 Dieter Grimm, *Proportionality in Canadian and German Constitutional Jurisprudence*, 57 THE UNIVERSITY OF TORONTO LAW JOURNAL 383–397 (2007). (Stating at 383: ‘There is, however, one jurisdiction that could have served as a model, namely Germany. Here the proportionality test has been applied since the late 1950s, whenever the Constitutional Court has had to review laws limiting fundamental rights, or administrative and judicial decisions applying such laws. From Germany the principle of proportionality spread to most other European countries with a system of judicial review, and to a number of jurisdictions outside Europe.’).

12 The Right to Health Fact Sheet No. 31, (2008), <https://www.who.int/gender-equity-rights/knowledge/right-to-health-factsheet31.pdf?ua=1> (last visited Jul. 4, 2020).

13 For a discussion of ECHR and CJEU proportionality case law, see eg United Kingdom Supreme Court, *Lumsdon & Ors, R (on the application of) v Legal Services Board* [2015] UKSC 41 (Jun. 24, 2015), <http://www.bailii.org/uk/cases/UKSC/2015/41.html> (last visited Apr. 23, 2020).

14 In Europe, the differences in national approaches are particularly well-illustrated by the discussions unfolding after the German Federal Constitutional Court’s PSPP judgment (BVerfG, Judgment of the Second Senate of May 05, 2020–2 BvR 859/15 -, paras. 1–237, [http://www.bverfg.de/e/rs20200505\\_2bvr085915en.html](http://www.bverfg.de/e/rs20200505_2bvr085915en.html) (last accessed Jul, 4 2020). The German Federal Constitutional Court’s PSPP Judgment: Proportionality Review Par Excellence, EUROPEAN LAW BLOG (2020), <https://europeanlawblog.eu/2020/06/02/the-german-federal-constitutional-courts-pspp-judgment-proportionality-review-par-excellence/> (last visited Jul 4, 2020). Regarding the historical developments after World War II and the differences and similarities between the German and US, c.f.: Moshe Cohen-Eliya & Iddo Porat, *American Balancing and German Proportionality: The Historical Origins*, 8 Int’l J. Const. L. 263 (2010).

abstract value of the colliding rights vis-à-vis the concrete intensity of the impact on each party by the relevant action. The primary goal is then to find a sound balance, wherein colliding rights can still be exercised to the greatest possible extent even though they might affect each other.<sup>15</sup> Practical concordance can only be achieved and assessed within the framework of the principle of proportionality.

### II.A. Procedural and Substantive Legal Balancing

The proportionality principle consists of two main steps, procedural and substantive legal balancing. Mistakes made during either stage could render any public health action unlawful.<sup>16</sup> To comply with procedural rights and obligations, legal and administrative actors should make determinations in a transparent, objective, and impartial manner.<sup>17</sup> Moreover, all relevant case facts must be scrutinized as comprehensively as possible and form the basis of the administrative order, which must, among other things, be open for judicial review and challenges.

The second stage, substantive legal balancing of COVID-19 antibody testing, requires that population's health interests are assessed through the lens of the affected rights of individuals or entities. Substantive legitimacy of the relevant action or administrative decision depends on whether it (1) pursued a 'legitimate objective', (2) was 'suitable' to achieve that goal, and (3) was 'necessary' to achieve the objectives legitimately pursued by the law in question. Where there is a choice between several suitable measures, the least burdensome measure must be pursued. Finally, the measure must also be (4) 'reasonable and proportionate to the end' (ie, any disadvantage caused must not be disproportionate to the aims pursued).<sup>18</sup>

This assessment is necessary to ensure that any impact on civil rights is mitigated while preserving the efficiency of the measures. In the COVID-19 antibody testing case, this might also imply that authorities will have to weigh colliding individual rights against each other in line with the principle of practical concordance in German constitutional law.

## III. APPLYING THE PROPORTIONALITY PRINCIPLE TO COVID-19 ANTIBODY TESTING

The proportionality principle entails that each individual case needs to be decided on the basis of its specific circumstances and facts. In the following, we apply the proportionality principle to three case studies: (i) Returning to the Workplace, (ii) Travel, and (iii) Vaccines.

### III.A. Assumptions

Our discussion of the cases studies rely on two major assumptions:

1. Although the proportionality principle includes both a procedural and substantive legal assessment, we assume here that the procedural requirements are fulfilled and that the action in question pursues a

15 Matthias Klatt, *Judicial review and institutional balance: Comments on Dimitrios Kyritsis*, REVUS 21–38 (2019).

16 William Kirch (Ed.). *Encyclopedia of Public Health*, Volume 1: A–H Volume 2: I–Z, p 835 (2008)

17 *Id.*

18 *Id.*

legitimate action of sufficient importance. We thus limit our scope of analysis to the substantive legal balancing.

2. We assume that antibody tests for COVID-19 are of sufficient accuracy and reliability. In particular, we must be able to say for certain that the presence of COVID-19 antibodies truly confers immunity and for how long. In order to generate a meaningful antibody test, we need more information about the relationship between antibodies and immunity (eg, the duration of immunity, level of antibodies needed in the blood, etc.). Further, antibody testing would likely need to be paired with a negative diagnostic test, because periods of active infection and positive antibodies may overlap—especially for testing that identifies early response antibodies (IgM).<sup>19</sup> Moreover, to avoid high risks of false positive and negative results, we assume that the antibody test must have high specificity and sensitivity.

### III.B. Case Study 1: Returning to the Workplace

After weeks and months of lockdowns, stay-at-home orders, and social distancing, many communities are attempting to return to a “new normal.” This includes people returning to their workplaces that, in some cases, were required to close due to government restrictions. In this context, questions have been raised whether it is appropriate to require or request employees to undergo antibody testing before returning to work.<sup>20</sup> Those with positive antibody tests would thus be able to more safely return to work, assuming there is a clearer understanding of the degree and duration of the immunity conferred.

Offering antibody testing on a voluntary basis is unlikely to result in an infringement of fundamental rights, which would trigger the need to apply the principle of proportionality. As soon as antibody testing becomes mandatory by laws, regulations, or executive orders at the national level, the proportionality principle should be applied. From the perspective of proportionality, the less intrusive measure would be to require that employees practice social distancing at the workplace and that a contact tracing application be downloaded—assuming sufficient privacy standards are in place—that notifies the employee of likely exposure to COVID-19. Although such requirements would likely be less burdensome for the employees, they might not be as suitable for the intended aim. Social distancing can be difficult to maintain in a workplace and contact tracing applications vary in efficiency depending on how widespread their use is in the broader population<sup>21</sup> (ie in this case, beyond the mandatory use for employees).

19 Regarding different techniques for screening, diagnosis and monitoring of COVID-19, c.f.: The Centre for Evidence-Based Medicine CEBM, *What tests could potentially be used for the screening, diagnosis and monitoring of COVID-19 and what are their advantages and disadvantages?*, <https://www.cebm.net/covid-19/what-tests-could-potentially-be-used-for-the-screening-diagnosis-and-monitoring-of-covid-19-and-what-are-their-advantages-and-disadvantages/> (last visited Jul. 5, 2020).

20 What You Should Know About COVID-19 and the ADA, the Rehabilitation Act, and Other EEO Laws | U.S. Equal Employment Opportunity Commission, <https://www.eeoc.gov/wysk/what-you-should-know-about-covid-19-and-ada-rehabilitation-act-and-other-eeo-laws> (last visited Jul. 4, 2020).

21 Guidelines 04/2020 on the use of location data and contact tracing tools in the context of the COVID-19 outbreak. European Data Protection Board, [https://edpb.europa.eu/sites/edpb/files/files/file1/edpb\\_guidelines\\_20200420\\_contact\\_tracing\\_covid\\_with\\_annex\\_en.pdf](https://edpb.europa.eu/sites/edpb/files/files/file1/edpb_guidelines_20200420_contact_tracing_covid_with_annex_en.pdf) (last visited Jul. 4, 2020).

Finally, in order to assess whether the measure is reasonable and proportionate to achieve its end, the analysis might focus on restrictions to an employee's right to self-determination and autonomy. This may be particularly relevant as antibody tests are considered medical interventions that also affect an individual's right to physical integrity. The impact on the individual must be balanced against the public health interest in requiring antibody testing. Mandating that employees undergo antibody testing would infringe more consequentially with an employee's autonomy, requiring stronger justification for the public health rationale. The outcome of the substantive legal assessment would also depend on the nature of the workplace. For instance, required antibody testing of an employee whose commute and nature of work does not involve exposure to other people would hardly be justifiable under the proportionality principle. It might however, be justifiable to require antibody testing for an employee who is exposed to crowds on a daily basis—during work hours or the commute to work.

### III.C. Case Study 2: Travel

In the European Union, member nations often depend on routine cross-border travel for economic stability. For instance, one of the authors is a German national who lives in Sweden and works in Denmark. Given the disparate approaches to handling COVID-19 between Sweden and Denmark, recreational travel between the two nations across the Øresund Bridge is subject to a relatively complex set of rules, including a requirement for some Swedish residents (based on which Swedish county they reside in) to produce a negative COVID-19 diagnostic test within the 72-hour period prior to the desired border crossing.<sup>22,23</sup> As a result, routine travel of commuters with a work certificate to cross the international border is mired with delays and uncertainty.

Although the EU has issued guidelines with general principles of safe travels within the region, EU Member States have relatively broad discretion to implement their own set of rules for cross-border travel.<sup>24</sup> EU Member States are already opening their borders without requiring antibody testing, immunity certificates, or immunity passports. Unless these same Member States see a spike in new infections linked to these travels, mandating antibody tests as a condition of border crossing may fail the necessity test of the proportionality principle since less restrictive suitable alternatives with similar public health outcomes have been established. However, if border opening resulted in many new COVID-19 infections, antibody testing and documentation of its results might very well be a more suitable solution for a long-term, sustainable opening of borders. In that setting, EU Member States would need to demonstrate that less burdensome measures are not as suitable. Furthermore, the excessive impact of antibody testing on civil rights—such as the restrictions on freedom of movement for those who do not hold a positive antibody test (and there is no vaccine)—would need

22 Agnete Finnemann Scheel, *Rigspolitiet skærer igennem efter stor forvirring: Svenskere skal have negativ test klar ved grænsen*, DR, Jun. 27, 2020, <https://www.dr.dk/nyheder/indland/rigspolitiet-skaerer-igennem-efter-stor-forvirring-svenskere-skal-have-negativ-test> (last visited Jul. 4, 2020).

23 Travel from Sweden to Denmark (and beyond): These are the key rules and documents, (2020), <https://www.thelocal.com/20200703/travel-from-sweden-to-denmark-and-beyond-these-are-the-key-rules-and-documents> (last visited Jul. 4, 2020).

24 Travel and transportation during the coronavirus pandemic, EUROPEAN COMMISSION, [https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/travel-and-transportation-during-coronavirus-pandemic\\_en](https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/travel-and-transportation-during-coronavirus-pandemic_en) (last visited Jul. 4, 2020).

to be justified from a public health perspective. This could pose a significant challenge to the Member States, especially given that freedom of movement for EU citizens is one of the fundamental pillars of the Union.

The EU might also have to develop a systematic method for handling antibody test results from travelers from outside the EU who want to enter one of its Member States. Conversely, a method of verifying the immunity status of EU citizens who wish to travel outside the EU may also be needed in the future. Although these issues may currently be relevant only for those who had been infected and recovered from COVID-19, it will also be of increased importance if a vaccine becomes available.

### III.D. Case Study 3: Vaccines

Another scenario where antibody testing could be of increased value is if vaccines become available which will need to be allocated and monitored for efficiency over time.<sup>25</sup> Although it is uncertain if or when a vaccine for COVID-19 will be adequately developed and put to general use, discussions on how to allocate vaccines are already taking place with the recognition that supply may not be sufficient and equitably distributed.<sup>26,27</sup> On June 18, 2020, the WHO introduced a Global Allocation Framework, which prioritizes allocation of vaccines to health care workers, adults older than 65, and other adults at high risk of infection (those with underlying diseases such as cancer, cardiovascular disease, and obesity).<sup>28</sup> By the time a vaccine is developed and ready for distribution, it may be necessary to exclude recovered COVID-19 patients from the priority group. This will depend on how well we understand the duration and degree of immunity from reinfection for recovered COVID-19 patients. If the existence of immunity for recovered patients is demonstrated, antibody testing for COVID-19 may be important for focusing vaccination efforts on those who are nonimmune and at high risk. Such a measure would be suitable to contribute to a fair, effective, and appropriate distribution of vaccines. However, it will be essential that the antibody test is reliable and accurate since a false positive result may be especially problematic in this setting—a nonimmune individual could be denied a vaccine due to an inaccurate lab test.

Further, it would be necessary to confirm whether there is another, less intrusive method than antibody testing to confirm who is already immune and thus not in need of a vaccine or not in need of priority vaccination. In this context, it should be noted that solely relying on patients' symptoms or previous COVID-19 diagnosis might not be a suitable method to determine who should be given priority vaccines. Although it would be less intrusive than offering or requiring antibody tests to confirm immunity and exclude from priority groups, it would dismiss mildly symptomatic or asymptomatic cases of COVID-19 whose diagnosis was never confirmed.

25 Marc Lipsitch, Rebecca Kahn & Michael J. Mina, *Antibody testing will enhance the power and accuracy of COVID-19-prevention trials*, 26 *NAT. MED.* 818–819 (2020).

26 Thomas J. Bollyky, Lawrence O. Gostin & Margaret A. Hamburg, *The Equitable Distribution of COVID-19 Therapeutics and Vaccines*, 323 *JAMA* 2462–2463 (2020).

27 Alberto Giubilini, Julian Savulescu, Dominic Wilkinson, *COVID-19 Vaccine: Vaccinate the Young to Protect the Old?*, *J. Law Biosci.*, Isaa050 (2020).

28 A Global Framework to Ensure Equitable and Fair Allocation of COVID-19 Products—And potential implications for COVID-19 Vaccines (2020).



Lastly, the method chosen would need to be reasonable and proportionate. For example, privacy concerns would need to be considered. The person undergoing the antibody testing should be informed of how the sample will be stored, with whom the data will be shared, and whether the sample can be reused for purposes other than providing the individual with information about the results. The repurposing could include the sharing of the data collected with third parties for research, innovation, or marketing purposes. Informed consent would need to address these issues in a transparent way.

Substantive legal balancing will also remain relevant in the context of further allocation of vaccines (outside of prioritized groups). Supply is likely to remain limited while production efforts are scaled up. Immune status of recovered COVID-19 patients will consequently continue to be necessary to identify. Although our understanding of COVID-19 immunity advances, continuous application of the proportionality principle to the prioritization of vaccine allocation will be necessary.

If the supply of COVID-19 vaccines will be sufficient on a global scale, the proportionality principle and the legal substantive assessment continues to hold value. This would, for example, be the case if vaccination was made mandatory. One would need to take into account that antibody testing (ie, taking a blood sample) may likely be less physically intrusive than receiving a vaccine in the form of an injection or multiple injections.

#### IV. CONCLUSION

Decision-making on antibody testing will need to be based on scientific evidence and implemented in a precautionary, proportional, and nondiscriminatory manner. We have discussed the proportionality principle, which provides a useful framework to guide decision making during the COVID-19 pandemic. We have analyzed the application of the proportionality principle using three case studies related to COVID-19—returning to the workplace, travels, and vaccines. We have shown that sound procedural and substantive legal balancing is necessary prerequisite to justify different treatments of residents based on the outcome of antibody testing for COVID-19 immunity. As nation states reopen, antibody testing—applied in line with the proportionality principle—might become necessary for a more long-term, sustainable opening of workplaces and international borders if COVID-19 continues to pose a threat.

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#### CONFLICTS OF INTEREST

The authors have no financial, personal, academic, or other conflicts of interest to declare.