



# The European Journal of Psychology Applied to Legal Context

<http://journals.copmadrid.org/ejpalc>



## Transforming the Area under the Normal Curve (AUC) into Cohen's $d$ , Pearson's $r_{pb}$ , Odds-Ratio, and Natural Log Odds-Ratio: Two Conversion Tables

Jesús F. Salgado

University of Santiago de Compostela, Spain

### ARTICLE INFO

#### Article history:

Received 16 July 2017

Accepted 18 October 2017

#### Keywords:

Area under the normal curve

ROC

Effect size

$r_{pb}$

$d$

$\ln(OR)$

Odds-ratio

#### Palabras clave:

Área bajo la curva normal

ROC

Tamaño del efecto

$r_{pb}$

$d$

$\ln(OR)$

Odd-ratio

### ABSTRACT

The importance of the area under the normal curve (AUC) as a measure of the effect size (ES) in applied and forensic research has been highlighted in several articles and Tables for converting the AUC curve into Pearson's  $r_{pb}$  and Cohen's  $d$  have been published. No Tables have been published for converting AUC into other frequently used effect size indexes, such as  $OR$  and  $\ln(OR)$ . In this article, two Tables for 500 AUC three-digit values provide the equivalent values for converting AUC into four ESs, including Cohen's  $d$  values, Pearson's  $r_{pb}$ , odds-ratio ( $OR$ ), and  $\ln(OR)$ . In the case of  $r_{pb}$ , the values are given for four base rates (.5, .3, .2, and .1). In addition, the formulas for transforming AUC into these effect sizes are provided, so researchers can calculate other values which have not been included in the Tables.

### La transformación del área bajo la curva normal (ACN) en la $d$ de Cohen, la $r_{pb}$ de Pearson, la razón de probabilidad y la razón de probabilidad con logaritmos naturales: dos tablas de conversión

### RESUMEN

La importancia del área bajo la curva normal (ACN) como medida del tamaño del efecto (TE) en la investigación aplicada y forense ha sido resaltada en varios artículos y han sido publicadas tablas para convertir el ACN en el coeficiente  $r_{pb}$  de Pearson y la  $d$  de Cohen. No han sido publicadas tablas para convertir la ABC en otros índices del tamaño del efecto frecuentemente usados, tales como  $OR$  y  $\ln(OR)$ . En este artículo, se proporcionan dos tablas para 500 valores de tres dígitos del ACN con los valores equivalentes para convertir el ACN en cuatro TE,  $d$  de Cohen,  $r_{pb}$  de Pearson,  $OR$  y  $\ln(OR)$ . En el caso de la  $r_{pb}$ , se dan los valores para cuatro tasas base (.5, .3, .2, y .1). Además, se incluyen las fórmulas para la conversión en estos tamaños de efectos, de tal modo que los investigadores puedan calcular otros valores no incluidos en las Tablas.

Many research domains of life, social, and experimental sciences report their findings in terms of an effect size (ES) estimate. Nevertheless, there is not a single agreed definition of ES. In this regard, Kelley and Preacher (2012) revised several definitions of ES and provided a useful and comprehensive definition. According to Kelley and Preacher (2012, p. 140), ES is defined as "a quantitative reflection of the magnitude of some phenomenon that is used for the purpose of addressing a question of interest." In this definition, an effect is a quantitative reflection of a phenomenon, and size is the magnitude of something.

The use of an ES was recommended by the American Psychological Association (APA) Task Force on Statistical Inference (Wilkinson,

1999). The Task Force (Wilkinson, 1999, p. 599) stressed that "reporting and interpreting effect sizes in the context of previously reported effects is essential to good research. It enables readers to evaluate the stability of results across samples, designs, and analyses." Currently, this practice is also required by some editors and journals.

The number of ES measures is large, and the use of one or other coefficient depends, in part, on the traditions of a particular science or research area. The three most relevant factors for selecting a specific ES are: (a) the research question and the goals of the study; (b) the design type (e.g., experimental, correlational, cross-sectional, longitudinal, and so on), and (c) the nature of the variables and how

Cite this article as: Salgado, J. F. (2018). Transforming the area under the normal curve (AUC) into Cohen's  $d$ , Pearson's  $r_{pb}$ , odds-ratio, and natural log odds-ratio: Two conversion tables. *The European Journal of Psychology Applied to Legal Context*, 10, 35-47. <https://doi.org/10.5093/ejpalc2018a5>

Funding: The research reported in this manuscript was supported by Grant PSI2014-56615-P from the Spanish Ministry of Economy and Competitiveness and Grant 2016 GPC GI-1458 from the Consellería de Cultura, Educación e Orden, Xunta de Galicia. Correspondence: [jesus.salgado@usc.es](mailto:jesus.salgado@usc.es) (J. F. Salgado).

ISSN: 1889-1861/© 2018 Colegio Oficial de Psicólogos de Madrid. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

they are measured (e.g., continuous, categorical, true dichotomous, dichotomized, and so on).

The most common ES estimates are the correlation coefficient (e.g., Pearson's  $r$ ), Cohen's  $d$ , and  $z$ . Nevertheless, many other ES indexes are available to researchers. For example, ratios, odds-ratio ( $OR$ ), natural log odds-ratio –  $\ln(OR)$  –, relative operating characteristic (ROC) curves, among others, are used for reporting findings (see Borenstein, Hedges, Higgins, & Rothstein, 2009; Card, 2012; Cohen, 1977; Cooper, Hedges, & Valentine, 2009; Hedges & Olkin, 1985; Kelley & Preacher, 2012; Sánchez-Meca, Marín-Martínez, & Chacón-Moscoso, 2003; for a large variety of ES indexes). In the last thirty years, the importance of calculating and reporting ESs has increased as they are the basis for cumulative quantitative research and meta-analysis.

For example, the family of Pearson correlation coefficients is widely used in validity studies in work and organizational (W/O) psychology (e.g., Lado & Alonso, 2017; Rodríguez, 2016) and in psychometric meta-analytic methods and validity generalization studies (Salgado, 2017; Salgado, Moscoso, & Anderson, 2016; Schmidt & Hunter, 2015). Cohen's  $d$  is the most common ES in experimental studies, for estimating the utility of clinical interventions (e.g., the effects of psychotherapy), in the Glassian meta-analytic method (Glass, 1976; Glass, McGraw, & Smith, 1981), and in the study of gender differences (e.g., Alonso & Moscoso, 2017; Alonso, Moscoso, & Salgado, 2017). Fisher's  $Z$  transformation of correlation coefficients is used extensively in the study of attitudes and is the basis of the correlational meta-analysis method developed by Hedges and Olkin (1985). For its part, the area under the curve (AUC) is a relatively frequently used estimate of the effect size of the decisions taken under risk and uncertainty, in vigilance studies, forensic studies, law and human behavior studies, and, also, it is the basis for the estimates of the ROC curve when a normal distribution is assumed (Balaswamy & Vardhan, 2015; Hasselblad & Hedges, 1995; Krzanowski & Hand, 2009; Marzban, 2004; Rice & Harris, 1995; Swets, 1973).

Nevertheless, even within these research areas and domains, despite the fact that a specific ES index is more frequently employed, empirical studies use a variety of them for reporting their findings. Due to this, over the years, some formulas have been developed for the conversion of one ES coefficient into others. For example, there are formulas for converting  $r$  into  $d$ , and  $r$  into  $z$ , and vice versa (see, for example, Rosenthal, 1991, for a large number of formulas). There are also a large number of mathematical functions for converting AUC into  $z$ , and vice versa (e.g., Brophy, 1983; 1985; Bryc, 2002; Choudhury, 2014; Emerson, 1979; Hart, 1957; 1966; Polya, 1945; Zelen & Severo, 1964). Consequently, it is also technically possible to transform, for instance, the AUC into Cohen's  $d$  through several, successive intermediate conversions. These transformations are very useful and necessary from a practical point of view, as for both researchers and practitioners it is very convenient to have the possibility of unifying findings in a common metric unit. The transformations are also useful for meta-analysis, as these methods require the estimation of all the ESs using the same coefficient.

A problem with some empirical studies is that they do not inform about the ES and report the results in terms of alternative statistical coefficients, such as  $F$ ,  $t$ ,  $\chi^2$ , and so on. For this reason, researchers need to transform these values into an ES index. It is also important that researchers can transform the results reported in one metric into a different metric. For example, it is relatively common and easy for researchers to transform  $t$ ,  $F$ , and  $\chi^2$  into Pearson's  $r$  or into Cohen's  $d$  and Pearson's  $r$  into Cohen's  $d$  or Cohen's  $d$  into Pearson's  $r$  (see Rosenthal, 1991). However, the transformation is less common for other ES indexes, e.g.,  $OR$  and  $\ln(OR)$ , ratios, due mainly to two factors. One is the difficulty of the calculations. For, example some calculation involve logarithms, potencies, cosine values, etc. (see Bonnet, 2007,

Hedges & Olkin, 1985; Salgado, 2016; for some examples). The second factor is that some formulas are relatively unknown (e.g., the formula for the standard error of a ratio, the formula for converting the point-biserial correlation,  $r_{pb}$ , into  $OR$ ). For example, Block and Crain (2007) stated that no transformation existed for converting  $OR$  and relative risk (RR) into a correlation, but a formula suggested by Pearson (1900) is available (see Bonnet, 2007, for additional formulas). A third factor is that a number of published articles do not contain the data to calculate (or re-calculate) ESs. Moreover, the majority of well-known software is focused on the most typical ES indexes.

Therefore, converting one ES into another is technically possible and several transformation formulas are available to the researchers. However, many of these transformations require a number of intermediate conversions that increase the computational work of the researchers, together with the additional complication that many of the conversions are not available by default in the most popular statistical packages (e.g., SPSS, SAS). Furthermore, some of these intermediate transformations consist of large series of potencies. This difficulty has the side-effect that in meta-analytic studies some researchers exclude some primary studies from the final database because they cannot transform the original statistical coefficient into the effect size used in the meta-analytic method (typically,  $r$  and  $d$  in psychology, for instance).

The objective of this paper is to provide researchers and practitioners with tables for converting AUC-values into Cohen's  $d$ ,  $r_{pb}$  for different base rates,  $OR$ , and  $\ln(OR)$ . At present researchers and practitioners have the possibility of using the Table constructed by Rice and Harris (2005), which gives the Cohen's  $d$  and  $r_{pb}$  values for 137 AUC values. However, there are no Tables for converting the AUC-values directly into  $OR$  and  $\ln(OR)$  (and vice versa), nor are there for  $r_{pb}$  for base rates other than 50%.

## ROC Area and Effect Sizes

In a pioneering effort, Rice and Harris (2005) posited the necessity of converting research results (e.g.,  $F$ , and  $\chi^2$ ) into ES and, particularly, they highlighted the importance of the area under the curve (AUC) as an index in forensic psychology research where it is commonly used. The area under the ROC curve is also frequently used in diagnostic areas (e.g., radiology, clinical microbiology) and in psychophysics, among other research and practice fields (see Swets, 1986b, for applications in different fields). For instance, Mossman (1994) illustrated its use in the study of violence and Humphryes and Swets (1991) showed its use for test validation purposes.

A ROC curve describes the functional relationships between the proportion of times that an alternative (say,  $h$ ) is chosen when it occurs and the proportion of times that this alternative is chosen when another alternative (say,  $f$ ) occurs. In signal-detection theory (SDT) terminology,  $h$  is termed hit rate (or success proportion, or true-positive proportion), and  $f$  is termed false-alarm rate (or failure proportion or false-positive proportion). The two most popular indices of discrimination are  $d'$  and  $A_z$ , which describe how accurately experimental subjects and professionals perform a discrimination task (Swets, 1986a).

In the proposal of the index, Tanner and Swets (1954) defined  $d'$  as the  $z$  score corresponding to  $f$  minus the  $z$  score corresponding to  $h$ , and it was termed index of detectability (Swets, 1986a). According to SDT,  $d'$  is equal to the difference between the means of  $h$  and  $f$  distributions, expressed in standard deviation units of the  $f$  distribution (or equivalently for the standard deviation of the  $h$  distribution; see Gescheider, 1976; Swets, 1986a). Therefore:

$$d' = \frac{M_h - M_f}{\sigma_f} \quad (1)$$

This equation shows the difference between the means of the two probability density functions (PDF) in terms of the standard deviation of the PDF for  $f$  (or, equivalently, for  $h$ ). The  $d'$  index assumes equal-variance normal distributions. However, as there are cases in which the assumption of equal variances is not held, an index termed  $\Delta m$  was proposed which is consistent with unequal-variance, normal distributions (Green & Swets, 1974; Grescheider, 1976; Swets, 1986a). The definition of  $\Delta m$  is similar to  $d'$ , therefore,

$$\Delta m = \frac{Mean_h - Mean_f}{\sigma_f} \quad (2)$$

It is obvious that if  $\sigma_h$  and  $\sigma_f$  are equal, then  $d'$  and  $\Delta m$  are equal too. Interestingly, the  $\Delta m$  index is algebraically equivalent to the  $\Delta$  coefficient given by (Glass 1976; Glass, McGraw, & Smith, 1981) for examining the effect of psychotherapy treatments. According to Glass et al. (1981),  $\Delta$  is equal to the difference between the mean of the treatment group and the control group mean expressed in standard deviation units of the control group,

$$\Delta = \frac{\bar{X}_r - \bar{X}_c}{\sigma_c} \quad (3)$$

Therefore, Glass'  $\Delta$  and  $\Delta m$  are analogous. In addition, Glass'  $\Delta$  can be considered a special case of Cohen's  $d$ , because if the standard deviation of the control group ( $\sigma_c$ ) is equal to the standard deviation of the treatment group ( $\sigma_r$ ), Cohen's  $d$  and Glass'  $\Delta$  are equal, therefore  $d'$ ,  $\Delta m$ , Glass'  $\Delta$ , and Cohen's  $d$  are equal too. Otherwise, Cohen's  $d$  can be smaller or larger than Glass'  $\Delta$  depending on the value of the ratio  $\sigma_r/\sigma_c$ . If the ratio is greater than 1, Cohen's  $d$  will be larger than Glass'  $\Delta$  and if the ratio is smaller than 1, Cohen's  $d$  will be smaller Glass'  $\Delta$ .

The second SDT index,  $A_z$ , was defined by Swets (1986a, p. 114) as the "area under the cumulative normal function up to the normal-deviate value equal to  $z(A)$ ". The  $A_z$  index can range from .5 to 1 and it assumes any form of distribution that can be transformed monotonically to the normal distribution (Swets, 1986a). Consequently, as  $A_z$  is the area under the normal curve, if the two variances are equal, Swets (1986a, equation 21) showed that

$$d' = \sqrt{2} * z(A) \quad (4)$$

and, therefore, if the two variances are unequal

$$d' \equiv \sqrt{2} * z(A) \quad (5)$$

These last two equations are particularly relevant because, due the equivalence among  $d'$ ,  $\Delta m$ , Glass'  $\Delta$ , and Cohen's  $d$  shown above, they provide a way to transform the AUC into a Cohen's  $d$ . In addition, as Hedges and Olkin (1985) suggested, the assumption of equal population variances is reasonable in many cases in life and social sciences.

A point that must be mentioned is that, in some cases, the observed  $A_z$  values are underestimates of the true  $A_z$  (Humphreys & Swets, 1991; Swets, 1986b). This is due to the fact that they were computed on a selected sample of individuals. For example, only the sub-group

of most violent individuals, and not all the violent individuals within the group attending a psychotherapy program, the first sub-group will be restricted (selected). The same would happen if only a selected group of candidates takes a training course. This selection bias causes the standard deviation of this restricted group to be smaller than the standard deviation of the large group. Therefore, in some cases, the inequality of variances between the two distributions can be, in part, due to the artefactual effects of the selection bias and not because there is a true inequality. Gray, Begg, and Greenes (1984) developed an approach to correct  $A_z$  for selection bias.

In order to facilitate comparisons across follow-up studies that report different ES indexes, Rice and Harris (2005) developed a table of the equivalences among AUC and  $d$ , and  $r_{pb}$ . Rice and Harris (2005) Table includes the AUC values from .50 to 1 and the respective values of  $z$ ,  $d$ , and  $r_{pb}$ . One limitation of Rice & Harris' Table is that it includes values for a 50% base rate only. In other words,  $p = q = .5$ . However, base rates different from 50% are not uncommon in practice and research (Swets, Dawes, & Monahan, 2000). The base rate is important because the  $r_{pb}$  value corresponding to a specific  $d$  value depends partially on the base rate. Therefore, for the same  $d$  value, different  $r_{pb}$  can exist depending on the base rate. Moreover, as soon the base rate differs from 50%, the  $r_{pb}$  values decrease, so the larger (or smaller) than 50% the base rate, the smaller the  $r_{pb}$ .

To create the Table, Rice and Harris used three types of information. First, they converted the AUC values into  $z$ -scores (or normal deviate of AUC), using the Tables of Pearson and Hartley (1954). Second, they used the formula to transform the  $z$ -value into a Cohen's  $d$  value as mentioned above:

$$d = \sqrt{2} * z(AUC)$$

Next, to transform the Cohen's  $d$  value into the equivalent  $r_{pb}$  value, they used the well-known formula:

$$r = \frac{d}{\sqrt{d^2 + (1/p * q)}} \quad (6)$$

On this point, it is important to take into account that the conversion of  $d$  to a correlation is always  $r_{pb}$ , but this is true only when a true binary variable is used in the study. In other words, the nature of the dichotomization must be considered. If the dichotomization is natural (e.g., treatment vs. non-treatment; men vs. women), then the conversion from  $d$  produces  $r_{pb}$ , but if the dichotomization is artificial (i.e., a continuous variable is divided into two groups), then the conversion of  $d$  is an underestimation of  $r$ . Hunter and Schmidt (1990, p. 276) suggested a process to convert from  $d$  to Pearson's  $r$  if the binary variable is a result of an artificial dichotomization:  $d$  would first convert to  $r_{pb}$  and, then, it would convert from  $r_{pb}$  to  $r$ . This clarification is relevant because as Nunnally (1978), among others stated, if a continuous variable is split into two values (or groups), the maximum value of correlation is not 1, but rather .79 (when  $p = q = .50$ , otherwise it is lower than .79). A detailed account of this issue appears in Hunter and Schmidt (1990, chapters 3 and 6). Moreover, if a correlational study was done with two continuous variables and the researcher's goal is to transform the  $r$  into a Cohen's  $d$ , such Pearson's  $r$  can be directly transformed into a Cohen's  $d$ .

Consequently, the  $d$  values under the first research design (i.e., true experiment, true binary variable) and the second one (i.e., artificial dichotomization of a continuous variable) provide different information and different estimates of the ES. For example, a Pearson's  $r$  of .50 equals an  $r_{pb}$  of .40 (for  $p = q = .50$ ) and equals a  $d$  of .87.

When a continuous variable is dichotomized,  $r_{pb}$  underestimates  $r$  by a factor of  $y/\sqrt{p^*q}$ , where  $p^*q$  is the standard deviation of  $X$  ( $p =$  proportion of cases in the higher group or hits and  $q = 1 - p$ ) and  $y$  is the ordinate of the normal-distribution curve at the point of division between  $p$  and  $q$ . The underestimation varies from about 1.25 when  $p = .5$  to about 3.73 when  $p = .99$  (Guilford & Fruchter, 1978, p. 311; Hunter & Schmidt, 1990, p. 256; see also Magnusson, 1967).

### Aims of This Study

Two new extended Tables have been created using a process of six steps. In each step, a new transformation of the  $AUC$  is made and a different ES estimate is given. In addition to  $z$ , the new Tables provide the estimates of  $AUC$  as Cohen's  $d$  for dichotomous variables,  $r_{pb}$ ,  $OR$ , and the  $\ln(OR)$  for continuous and dichotomous variables.

The process of construction of Table 1 was as follows. The first step was the conversion of an  $AUC$ -value into a  $z$  coefficient. This conversion can be made using the following equation provided by Zelen and Severo (1994, p. 933):

$$z = t - \left( \frac{2.515517 + .802853t + .0103328t^2}{1 + 1.432788t + .189269t^2 + .001308t^3} \right) \quad (7)$$

where

$$t = \sqrt{\ln \frac{1}{(1 - AUC)^2}}$$

Or it can be made using one of the functions listed by Yerukala and Boiroju (2015), all of which produce practically identical values until the third decimal. The second step was to convert the  $z$ -value into a Cohen's  $d$ , using the formula given by Swets (1986a):

$$d = z * \sqrt{2}$$

The third step involved the conversion of a Cohen's  $d$  into an  $r_{pb}$ . This was done for base rates of .5, .3, .2, and .1. The equation is:

$$r_{pb} = \frac{d}{\sqrt{d^2 + K}} \quad (8)$$

Where  $K = 1/p^*q$ . Therefore,  $K$  values for  $p = .5, .3, .2,$  and  $.1$  are, 4, 4.76, 6.25, and 11.11, respectively. The  $K$  values clearly illustrate the decline of the  $r_{pb}$  as the  $p$  values decrease.

Table 2 provides the  $d$ -values converted to  $OR$  and  $\ln(OR)$ . The construction of Table 2 followed the same first two steps used for Table 1. The third step for Table 2 was to use the next two equations, provided by Borenstein et al. (2009), Card (2012), Hasselblad and Hedges (1995), and Sánchez-Meca et al. (2003) for obtaining the respective values of  $\ln(OR)$  and  $OR$ . These formulas are:

$$\ln(OR) = \frac{\pi * d}{\sqrt{3}} \quad (9)$$

and

$$OR = e^{\frac{d * \pi}{\sqrt{3}}} \quad (10)$$

In summary, Table 1 provides the values for the conversion from  $AUC$  to  $z$ ,  $d$ -Cohen, and  $r_{pb}$  for four base rates, and Table 2 provides the values for the conversion from  $AUC$  to  $z$ ,  $d$ -Cohen,  $\ln(OR)$ , and  $OR$ .

### Conclusion

Reporting ESs is a more and more common practice in research and Pearson's  $r$  and Cohen's  $d$  are two of the most frequently used indices of ES. However, a large variety of ES indices are used. Some of them are particularly used in specific research domains. The  $AUC$  is one of the most typically reported in forensic psychology research and in diagnostic and clinical research (e.g., radiology). Odds-ratio ( $OR$ ) and its varieties – e.g.,  $\ln(OR)$ , risk ratio – are also commonly found in articles reporting research findings. To encourage applied and forensic psychology researchers to report an ES and also the conversion of a variety of ES indices to a common metric, this article tabulated the conversion from  $AUC$  into Cohen's  $d$ ,  $OR$ ,  $\ln(OR)$ , and  $r_{pb}$  for base rates of 50%, 30% 20% and 10% for 500  $AUC$  three-digit values. Rice and Harris' (2005) Table does not provide  $r_{pb}$  values for base rates other than 50% nor for ESs other than Cohen's  $d$  and  $r_{pb}$ . Therefore, the new tables can be seen, to a certain extent, as an extension of Rice and Harris's Table.

Researchers should be aware of when it is correct and appropriate to transform a specific ES into another one and when the transformation is not appropriate, even when the formulas can be used in both cases. For example,  $d'$  should not be transformed into  $OR$  when a within-group design is used, as  $OR$  requires a design with two independent samples. With regard to Cohen's  $d$  transformation into a correlation coefficient, the nature (true binary vs. dichotomized) of the independent variable dictates what type of correlation coefficient should be obtained (see pages 10-11). Therefore, we recommend the researchers make a reasonable use of the transformation formulas.

In summary, this article presents two new Tables for obtaining four types of ESs from  $AUC$ -values and, simultaneously, converting an ES index in several others. In addition, researchers and practitioners can calculate by themselves the ES of interest with the formulas included here for the values not given in the Tables.

### Conflict of Interest

The author of this article declares no conflict of interest.



**Table 1.** Conversion of AUC into *z*, Cohen's *d*, and *r<sub>pb</sub>* for Various Base Rates

AUC	<i>z</i>	<i>d</i>	<i>r<sub>pb</sub></i> <i>p</i> = .50	<i>r<sub>pb</sub></i> <i>p</i> = .3 & <i>q</i> = .7	<i>r<sub>pb</sub></i> <i>p</i> = .2 & <i>q</i> = .8	<i>r<sub>pb</sub></i> <i>p</i> = .1 & <i>q</i> = .9	AUC	<i>z</i>	<i>d</i>	<i>r<sub>pb</sub></i> <i>p</i> = .50	<i>r<sub>pb</sub></i> <i>p</i> = .3 & <i>q</i> = .7	<i>r<sub>pb</sub></i> <i>p</i> = .2 & <i>q</i> = .8	<i>r<sub>pb</sub></i> <i>p</i> = .1 & <i>q</i> = .9
0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.566	0.166	0.235	0.117	0.107	0.093	0.070
0.501	0.003	0.004	0.002	0.002	0.001	0.001	0.567	0.168	0.238	0.118	0.109	0.095	0.071
0.502	0.005	0.007	0.004	0.003	0.003	0.002	0.568	0.171	0.242	0.120	0.110	0.096	0.072
0.503	0.008	0.011	0.005	0.005	0.004	0.003	0.569	0.174	0.245	0.122	0.112	0.098	0.073
0.504	0.010	0.014	0.007	0.007	0.006	0.004	0.570	0.176	0.249	0.124	0.113	0.099	0.074
0.505	0.013	0.018	0.009	0.008	0.007	0.005	0.571	0.179	0.253	0.125	0.115	0.101	0.076
0.506	0.015	0.021	0.011	0.010	0.009	0.006	0.572	0.181	0.256	0.127	0.117	0.102	0.077
0.507	0.018	0.025	0.012	0.011	0.010	0.007	0.573	0.184	0.260	0.129	0.118	0.103	0.078
0.508	0.020	0.028	0.014	0.013	0.011	0.009	0.574	0.186	0.263	0.131	0.120	0.105	0.079
0.509	0.023	0.032	0.016	0.015	0.013	0.010	0.575	0.189	0.267	0.132	0.121	0.106	0.080
0.510	0.025	0.035	0.018	0.016	0.014	0.011	0.576	0.191	0.271	0.134	0.123	0.108	0.081
0.511	0.028	0.039	0.019	0.018	0.016	0.012	0.577	0.194	0.274	0.136	0.125	0.109	0.082
0.512	0.030	0.042	0.021	0.019	0.017	0.013	0.578	0.196	0.278	0.138	0.126	0.110	0.083
0.513	0.033	0.046	0.023	0.021	0.018	0.014	0.579	0.199	0.281	0.139	0.128	0.112	0.084
0.514	0.035	0.050	0.025	0.023	0.020	0.015	0.580	0.202	0.285	0.141	0.130	0.113	0.085
0.515	0.038	0.053	0.027	0.024	0.021	0.016	0.581	0.204	0.289	0.143	0.131	0.115	0.086
0.516	0.040	0.057	0.028	0.026	0.023	0.017	0.582	0.207	0.292	0.145	0.133	0.116	0.087
0.517	0.043	0.060	0.030	0.028	0.024	0.018	0.583	0.209	0.296	0.146	0.134	0.118	0.088
0.518	0.045	0.064	0.032	0.029	0.025	0.019	0.584	0.212	0.300	0.148	0.136	0.119	0.090
0.519	0.048	0.067	0.034	0.031	0.027	0.020	0.585	0.214	0.303	0.150	0.138	0.120	0.091
0.520	0.050	0.071	0.035	0.032	0.028	0.021	0.586	0.217	0.307	0.152	0.139	0.122	0.092
0.521	0.053	0.074	0.037	0.034	0.030	0.022	0.587	0.219	0.310	0.153	0.141	0.123	0.093
0.522	0.055	0.078	0.039	0.036	0.031	0.023	0.588	0.222	0.314	0.155	0.142	0.125	0.094
0.523	0.058	0.081	0.041	0.037	0.033	0.024	0.589	0.225	0.318	0.157	0.144	0.126	0.095
0.524	0.060	0.085	0.042	0.039	0.034	0.025	0.590	0.227	0.321	0.159	0.146	0.127	0.096
0.525	0.063	0.089	0.044	0.041	0.035	0.027	0.591	0.230	0.325	0.160	0.147	0.129	0.097
0.526	0.065	0.092	0.046	0.042	0.037	0.028	0.592	0.232	0.329	0.162	0.149	0.130	0.098
0.527	0.068	0.096	0.048	0.044	0.038	0.029	0.593	0.235	0.332	0.164	0.151	0.132	0.099
0.528	0.070	0.099	0.050	0.045	0.040	0.030	0.594	0.237	0.336	0.166	0.152	0.133	0.100
0.529	0.073	0.103	0.051	0.047	0.041	0.031	0.595	0.240	0.340	0.167	0.154	0.135	0.101
0.530	0.075	0.106	0.053	0.049	0.042	0.032	0.596	0.243	0.343	0.169	0.155	0.136	0.102
0.531	0.078	0.110	0.055	0.050	0.044	0.033	0.597	0.245	0.347	0.171	0.157	0.137	0.103
0.532	0.080	0.113	0.057	0.052	0.045	0.034	0.598	0.248	0.350	0.173	0.159	0.139	0.105
0.533	0.083	0.117	0.058	0.053	0.047	0.035	0.599	0.250	0.354	0.174	0.160	0.140	0.106
0.534	0.085	0.120	0.060	0.055	0.048	0.036	0.600	0.253	0.358	0.176	0.162	0.142	0.107
0.535	0.088	0.124	0.062	0.057	0.050	0.037	0.601	0.256	0.361	0.178	0.163	0.143	0.108
0.536	0.090	0.128	0.064	0.058	0.051	0.038	0.602	0.258	0.365	0.180	0.165	0.145	0.109
0.537	0.093	0.131	0.065	0.060	0.052	0.039	0.603	0.261	0.369	0.181	0.167	0.146	0.110
0.538	0.095	0.135	0.067	0.062	0.054	0.040	0.604	0.263	0.372	0.183	0.168	0.147	0.111
0.539	0.098	0.138	0.069	0.063	0.055	0.041	0.605	0.266	0.376	0.185	0.170	0.149	0.112
0.540	0.100	0.142	0.071	0.065	0.057	0.042	0.606	0.269	0.380	0.187	0.171	0.150	0.113
0.541	0.103	0.145	0.072	0.066	0.058	0.044	0.607	0.271	0.383	0.188	0.173	0.152	0.114
0.542	0.105	0.149	0.074	0.068	0.059	0.045	0.608	0.274	0.387	0.190	0.175	0.153	0.115
0.543	0.108	0.152	0.076	0.070	0.061	0.046	0.609	0.276	0.391	0.192	0.176	0.154	0.116
0.544	0.110	0.156	0.078	0.071	0.062	0.047	0.610	0.279	0.394	0.194	0.178	0.156	0.118
0.545	0.113	0.160	0.080	0.073	0.064	0.048	0.611	0.282	0.398	0.195	0.180	0.157	0.119
0.546	0.115	0.163	0.081	0.075	0.065	0.049	0.612	0.284	0.402	0.197	0.181	0.159	0.120
0.547	0.118	0.167	0.083	0.076	0.067	0.050	0.613	0.287	0.406	0.199	0.183	0.160	0.121
0.548	0.120	0.170	0.085	0.078	0.068	0.051	0.614	0.289	0.409	0.200	0.184	0.162	0.122
0.549	0.123	0.174	0.087	0.079	0.069	0.052	0.615	0.292	0.413	0.202	0.186	0.163	0.123
0.550	0.125	0.177	0.088	0.081	0.071	0.053	0.616	0.295	0.417	0.204	0.188	0.164	0.124
0.551	0.128	0.181	0.090	0.083	0.072	0.054	0.617	0.297	0.420	0.206	0.189	0.166	0.125
0.552	0.130	0.185	0.092	0.084	0.074	0.055	0.618	0.300	0.424	0.207	0.191	0.167	0.126
0.553	0.133	0.188	0.094	0.086	0.075	0.056	0.619	0.302	0.428	0.209	0.192	0.169	0.127
0.554	0.136	0.192	0.095	0.087	0.076	0.057	0.620	0.305	0.431	0.211	0.194	0.170	0.128
0.555	0.138	0.195	0.097	0.089	0.078	0.058	0.621	0.308	0.435	0.213	0.196	0.172	0.129
0.556	0.141	0.199	0.099	0.091	0.079	0.060	0.622	0.310	0.439	0.214	0.197	0.173	0.131
0.557	0.143	0.202	0.101	0.092	0.081	0.061	0.623	0.313	0.443	0.216	0.199	0.174	0.132
0.558	0.146	0.206	0.102	0.094	0.082	0.062	0.624	0.316	0.446	0.218	0.200	0.176	0.133
0.559	0.148	0.210	0.104	0.096	0.084	0.063	0.625	0.318	0.450	0.220	0.202	0.177	0.134
0.560	0.151	0.213	0.106	0.097	0.085	0.064	0.626	0.321	0.454	0.221	0.204	0.179	0.135
0.561	0.153	0.217	0.108	0.099	0.086	0.065	0.627	0.324	0.458	0.223	0.205	0.180	0.136
0.562	0.156	0.220	0.109	0.100	0.088	0.066	0.628	0.326	0.461	0.225	0.207	0.181	0.137
0.563	0.158	0.224	0.111	0.102	0.089	0.067	0.629	0.329	0.465	0.226	0.208	0.183	0.138
0.564	0.161	0.227	0.113	0.104	0.091	0.068	0.630	0.331	0.469	0.228	0.210	0.184	0.139
0.565	0.163	0.231	0.115	0.105	0.092	0.069	0.631	0.334	0.473	0.230	0.212	0.186	0.140

**Table 1.** Conversion of AUC into z, Cohen's d, and  $r_{pb}$  for Various Base Rates (continued)

AUC	z	d	$r_{pb}$ $p=.50$	$r_{pb}$ $p=.3 \& q=.7$	$r_{pb}$ $p=.2 \& q=.8$	$r_{pb}$ $p=.1 \& q=.9$	AUC	z	d	$r_{pb}$ $p=.50$	$r_{pb}$ $p=.3 \& q=.7$	$r_{pb}$ $p=.2 \& q=.8$	$r_{pb}$ $p=.1 \& q=.9$
0.688	0.490	0.693	0.327	0.303	0.267	0.203	0.751	0.677	0.958	0.432	0.402	0.358	0.276
0.689	0.493	0.697	0.329	0.304	0.268	0.205	0.752	0.681	0.962	0.434	0.404	0.359	0.277
0.690	0.496	0.701	0.331	0.306	0.270	0.206	0.753	0.684	0.967	0.435	0.405	0.361	0.279
0.691	0.498	0.705	0.332	0.307	0.271	0.207	0.754	0.687	0.971	0.437	0.407	0.362	0.280
0.692	0.501	0.709	0.334	0.309	0.273	0.208	0.755	0.690	0.976	0.439	0.408	0.364	0.281
0.693	0.504	0.713	0.336	0.311	0.274	0.209	0.756	0.693	0.980	0.440	0.410	0.365	0.282
0.694	0.507	0.717	0.337	0.312	0.276	0.210	0.757	0.696	0.985	0.442	0.411	0.367	0.283
0.695	0.510	0.721	0.339	0.314	0.277	0.211	0.758	0.700	0.990	0.443	0.413	0.368	0.285
0.696	0.513	0.725	0.341	0.315	0.278	0.213	0.759	0.703	0.994	0.445	0.415	0.369	0.286
0.697	0.515	0.729	0.342	0.317	0.280	0.214	0.760	0.706	0.999	0.447	0.416	0.371	0.287
0.698	0.518	0.733	0.344	0.318	0.281	0.215	0.761	0.709	1.003	0.448	0.418	0.372	0.288
0.699	0.521	0.737	0.346	0.320	0.283	0.216	0.762	0.713	1.008	0.450	0.419	0.374	0.289
0.700	0.524	0.741	0.347	0.322	0.284	0.217	0.763	0.716	1.012	0.452	0.421	0.375	0.291
0.701	0.527	0.745	0.349	0.323	0.286	0.218	0.764	0.719	1.017	0.453	0.422	0.377	0.292
0.702	0.530	0.749	0.351	0.325	0.287	0.219	0.765	0.722	1.021	0.455	0.424	0.378	0.293
0.703	0.533	0.753	0.353	0.326	0.289	0.220	0.766	0.726	1.026	0.456	0.426	0.380	0.294
0.704	0.536	0.757	0.354	0.328	0.290	0.222	0.767	0.729	1.031	0.458	0.427	0.381	0.295
0.705	0.539	0.762	0.356	0.330	0.291	0.223	0.768	0.732	1.035	0.460	0.429	0.383	0.297
0.706	0.541	0.766	0.358	0.331	0.293	0.224	0.769	0.735	1.040	0.461	0.430	0.384	0.298
0.707	0.544	0.770	0.359	0.333	0.294	0.225	0.770	0.739	1.045	0.463	0.432	0.386	0.299
0.708	0.547	0.774	0.361	0.334	0.296	0.226	0.771	0.742	1.049	0.465	0.433	0.387	0.300
0.709	0.550	0.778	0.363	0.336	0.297	0.227	0.772	0.745	1.054	0.466	0.435	0.388	0.301
0.710	0.553	0.782	0.364	0.337	0.299	0.228	0.773	0.749	1.059	0.468	0.436	0.390	0.303
0.711	0.556	0.786	0.366	0.339	0.300	0.230	0.774	0.752	1.063	0.469	0.438	0.391	0.304
0.712	0.559	0.790	0.368	0.341	0.301	0.231	0.775	0.755	1.068	0.471	0.440	0.393	0.305
0.713	0.562	0.795	0.369	0.342	0.303	0.232	0.776	0.759	1.073	0.473	0.441	0.394	0.306
0.714	0.565	0.799	0.371	0.344	0.304	0.233	0.777	0.762	1.078	0.474	0.443	0.396	0.308
0.715	0.568	0.803	0.373	0.345	0.306	0.234	0.778	0.765	1.082	0.476	0.444	0.397	0.309
0.716	0.571	0.807	0.374	0.347	0.307	0.235	0.779	0.769	1.087	0.478	0.446	0.399	0.310
0.717	0.574	0.811	0.376	0.348	0.309	0.236	0.780	0.772	1.092	0.479	0.447	0.400	0.311
0.718	0.577	0.815	0.378	0.350	0.310	0.238	0.781	0.775	1.097	0.481	0.449	0.402	0.313
0.719	0.580	0.820	0.379	0.352	0.312	0.239	0.782	0.779	1.101	0.482	0.451	0.403	0.314
0.720	0.583	0.824	0.381	0.353	0.313	0.240	0.783	0.782	1.106	0.484	0.452	0.405	0.315
0.721	0.586	0.828	0.383	0.355	0.314	0.241	0.784	0.786	1.111	0.486	0.454	0.406	0.316
0.722	0.589	0.832	0.384	0.356	0.316	0.242	0.785	0.789	1.116	0.487	0.455	0.408	0.317
0.723	0.591	0.836	0.386	0.358	0.317	0.243	0.786	0.793	1.121	0.489	0.457	0.409	0.319
0.724	0.594	0.841	0.388	0.360	0.319	0.245	0.787	0.796	1.126	0.490	0.458	0.411	0.320
0.725	0.597	0.845	0.389	0.361	0.320	0.246	0.788	0.799	1.131	0.492	0.460	0.412	0.321
0.726	0.600	0.849	0.391	0.363	0.322	0.247	0.789	0.803	1.135	0.494	0.462	0.414	0.322
0.727	0.603	0.853	0.392	0.364	0.323	0.248	0.790	0.806	1.140	0.495	0.463	0.415	0.324
0.728	0.607	0.858	0.394	0.366	0.325	0.249	0.791	0.810	1.145	0.497	0.465	0.416	0.325
0.729	0.610	0.862	0.396	0.367	0.326	0.250	0.792	0.813	1.150	0.499	0.466	0.418	0.326
0.730	0.613	0.866	0.397	0.369	0.327	0.252	0.793	0.817	1.155	0.500	0.468	0.419	0.327
0.731	0.616	0.871	0.399	0.371	0.329	0.253	0.794	0.820	1.160	0.502	0.469	0.421	0.329
0.732	0.619	0.875	0.401	0.372	0.330	0.254	0.795	0.824	1.165	0.503	0.471	0.422	0.330
0.733	0.622	0.879	0.402	0.374	0.332	0.255	0.796	0.827	1.170	0.505	0.473	0.424	0.331
0.734	0.625	0.883	0.404	0.375	0.333	0.256	0.797	0.831	1.175	0.507	0.474	0.425	0.332
0.735	0.628	0.888	0.406	0.377	0.335	0.257	0.798	0.834	1.180	0.508	0.476	0.427	0.334
0.736	0.631	0.892	0.407	0.378	0.336	0.259	0.799	0.838	1.185	0.510	0.477	0.428	0.335
0.737	0.634	0.896	0.409	0.380	0.338	0.260	0.800	0.842	1.190	0.511	0.479	0.430	0.336
0.738	0.637	0.901	0.411	0.382	0.339	0.261	0.801	0.845	1.195	0.513	0.480	0.431	0.338
0.739	0.640	0.905	0.412	0.383	0.340	0.262	0.802	0.849	1.200	0.515	0.482	0.433	0.339
0.740	0.643	0.909	0.414	0.385	0.342	0.263	0.803	0.852	1.205	0.516	0.484	0.434	0.340
0.741	0.646	0.914	0.416	0.386	0.343	0.264	0.804	0.856	1.210	0.518	0.485	0.436	0.341
0.742	0.649	0.918	0.417	0.388	0.345	0.266	0.805	0.860	1.216	0.519	0.487	0.437	0.343
0.743	0.652	0.923	0.419	0.389	0.346	0.267	0.806	0.863	1.221	0.521	0.488	0.439	0.344
0.744	0.655	0.927	0.421	0.391	0.348	0.268	0.807	0.867	1.226	0.523	0.490	0.440	0.345
0.745	0.659	0.931	0.422	0.393	0.349	0.269	0.808	0.871	1.231	0.524	0.491	0.442	0.346
0.746	0.662	0.936	0.424	0.394	0.351	0.270	0.809	0.874	1.236	0.526	0.493	0.443	0.348
0.747	0.665	0.940	0.425	0.396	0.352	0.271	0.810	0.878	1.241	0.527	0.494	0.445	0.349
0.748	0.668	0.945	0.427	0.397	0.353	0.273	0.811	0.882	1.247	0.529	0.496	0.446	0.350
0.749	0.671	0.949	0.429	0.399	0.355	0.274	0.812	0.885	1.252	0.531	0.498	0.448	0.352
0.750	0.674	0.954	0.430	0.400	0.356	0.275	0.813	0.889	1.257	0.532	0.499	0.449	0.353

**Table 1.** Conversion of AUC into *z*, Cohen's *d*, and *r<sub>pb</sub>* for Various Base Rates (continued)

AUC	<i>z</i>	<i>d</i>	<i>r<sub>pb</sub></i>				AUC	<i>z</i>	<i>d</i>	<i>r<sub>pb</sub></i>			
			<i>p</i> = .50	<i>p</i> = .3 & <i>q</i> = .7	<i>p</i> = .2 & <i>q</i> = .8	<i>p</i> = .1 & <i>q</i> = .9				<i>p</i> = .50	<i>p</i> = .3 & <i>q</i> = .7	<i>p</i> = .2 & <i>q</i> = .8	<i>p</i> = .1 & <i>q</i> = .9
0.814	0.893	1.262	0.534	0.501	0.451	0.354	0.877	1.160	1.641	0.634	0.601	0.549	0.442
0.815	0.896	1.268	0.535	0.502	0.452	0.355	0.878	1.165	1.648	0.636	0.603	0.550	0.443
0.816	0.900	1.273	0.537	0.504	0.454	0.357	0.879	1.170	1.655	0.638	0.604	0.552	0.445
0.817	0.904	1.278	0.539	0.505	0.455	0.358	0.880	1.175	1.662	0.639	0.606	0.554	0.446
0.818	0.908	1.284	0.540	0.507	0.457	0.359	0.881	1.180	1.669	0.641	0.608	0.555	0.448
0.819	0.912	1.289	0.542	0.509	0.458	0.361	0.882	1.185	1.676	0.642	0.609	0.557	0.449
0.820	0.915	1.295	0.543	0.510	0.460	0.362	0.883	1.190	1.683	0.644	0.611	0.559	0.451
0.821	0.919	1.300	0.545	0.512	0.461	0.363	0.884	1.195	1.691	0.646	0.612	0.560	0.452
0.822	0.923	1.305	0.547	0.513	0.463	0.365	0.885	1.201	1.698	0.647	0.614	0.562	0.454
0.823	0.927	1.311	0.548	0.515	0.464	0.366	0.886	1.206	1.705	0.649	0.616	0.563	0.455
0.824	0.931	1.316	0.550	0.516	0.466	0.367	0.887	1.211	1.713	0.650	0.617	0.565	0.457
0.825	0.935	1.322	0.551	0.518	0.467	0.369	0.888	1.216	1.720	0.652	0.619	0.567	0.459
0.826	0.938	1.327	0.553	0.520	0.469	0.370	0.889	1.221	1.727	0.654	0.621	0.568	0.460
0.827	0.942	1.333	0.555	0.521	0.470	0.371	0.890	1.227	1.735	0.655	0.622	0.570	0.462
0.828	0.946	1.338	0.556	0.523	0.472	0.373	0.891	1.232	1.742	0.657	0.624	0.572	0.463
0.829	0.950	1.344	0.558	0.524	0.473	0.374	0.892	1.238	1.750	0.659	0.626	0.573	0.465
0.830	0.954	1.349	0.559	0.526	0.475	0.375	0.893	1.243	1.758	0.660	0.627	0.575	0.466
0.831	0.958	1.355	0.561	0.528	0.477	0.377	0.894	1.248	1.765	0.662	0.629	0.577	0.468
0.832	0.962	1.361	0.562	0.529	0.478	0.378	0.895	1.254	1.773	0.663	0.631	0.579	0.470
0.833	0.966	1.366	0.564	0.531	0.480	0.379	0.896	1.259	1.781	0.665	0.632	0.580	0.471
0.834	0.970	1.372	0.566	0.532	0.481	0.381	0.897	1.265	1.789	0.667	0.634	0.582	0.473
0.835	0.974	1.378	0.567	0.534	0.483	0.382	0.898	1.271	1.797	0.668	0.636	0.584	0.474
0.836	0.978	1.383	0.569	0.535	0.484	0.383	0.899	1.276	1.805	0.670	0.637	0.585	0.476
0.837	0.982	1.389	0.570	0.537	0.486	0.385	0.900	1.282	1.813	0.672	0.639	0.587	0.478
0.838	0.986	1.395	0.572	0.539	0.487	0.386	0.901	1.288	1.821	0.673	0.641	0.589	0.479
0.839	0.990	1.401	0.574	0.540	0.489	0.387	0.902	1.293	1.829	0.675	0.642	0.590	0.481
0.840	0.995	1.406	0.575	0.542	0.490	0.389	0.903	1.299	1.837	0.677	0.644	0.592	0.483
0.841	0.999	1.412	0.577	0.543	0.492	0.390	0.904	1.305	1.846	0.678	0.646	0.594	0.484
0.842	1.003	1.418	0.578	0.545	0.493	0.391	0.905	1.311	1.854	0.680	0.647	0.596	0.486
0.843	1.007	1.424	0.580	0.547	0.495	0.393	0.906	1.317	1.862	0.681	0.649	0.597	0.488
0.844	1.011	1.430	0.582	0.548	0.496	0.394	0.907	1.323	1.871	0.683	0.651	0.599	0.489
0.845	1.015	1.436	0.583	0.550	0.498	0.396	0.908	1.329	1.879	0.685	0.653	0.601	0.491
0.846	1.020	1.442	0.585	0.551	0.500	0.397	0.909	1.335	1.888	0.686	0.654	0.603	0.493
0.847	1.024	1.448	0.586	0.553	0.501	0.398	0.910	1.341	1.897	0.688	0.656	0.604	0.495
0.848	1.028	1.454	0.588	0.554	0.503	0.400	0.911	1.347	1.905	0.690	0.658	0.606	0.496
0.849	1.032	1.460	0.590	0.556	0.504	0.401	0.912	1.354	1.914	0.691	0.659	0.608	0.498
0.850	1.037	1.466	0.591	0.558	0.506	0.403	0.913	1.360	1.923	0.693	0.661	0.610	0.500
0.851	1.041	1.472	0.593	0.559	0.507	0.404	0.914	1.366	1.932	0.695	0.663	0.611	0.501
0.852	1.045	1.478	0.594	0.561	0.509	0.405	0.915	1.373	1.941	0.696	0.665	0.613	0.503
0.853	1.050	1.484	0.596	0.562	0.510	0.407	0.916	1.379	1.950	0.698	0.666	0.615	0.505
0.854	1.054	1.490	0.598	0.564	0.512	0.408	0.917	1.386	1.959	0.700	0.668	0.617	0.507
0.855	1.058	1.497	0.599	0.566	0.514	0.410	0.918	1.392	1.969	0.702	0.670	0.619	0.509
0.856	1.063	1.503	0.601	0.567	0.515	0.411	0.919	1.399	1.978	0.703	0.672	0.621	0.510
0.857	1.067	1.509	0.602	0.569	0.517	0.412	0.920	1.405	1.988	0.705	0.673	0.622	0.512
0.858	1.072	1.515	0.604	0.570	0.518	0.414	0.921	1.412	1.997	0.707	0.675	0.624	0.514
0.859	1.076	1.522	0.606	0.572	0.520	0.415	0.922	1.419	2.007	0.708	0.677	0.626	0.516
0.860	1.080	1.528	0.607	0.574	0.522	0.417	0.923	1.426	2.017	0.710	0.679	0.628	0.518
0.861	1.085	1.534	0.609	0.575	0.523	0.418	0.924	1.433	2.026	0.712	0.680	0.630	0.519
0.862	1.089	1.541	0.610	0.577	0.525	0.420	0.925	1.440	2.036	0.713	0.682	0.632	0.521
0.863	1.094	1.547	0.612	0.578	0.526	0.421	0.926	1.447	2.046	0.715	0.684	0.633	0.523
0.864	1.099	1.554	0.613	0.580	0.528	0.422	0.927	1.454	2.057	0.717	0.686	0.635	0.525
0.865	1.103	1.560	0.615	0.582	0.529	0.424	0.928	1.461	2.067	0.719	0.688	0.637	0.527
0.866	1.108	1.567	0.617	0.583	0.531	0.425	0.929	1.469	2.077	0.720	0.689	0.639	0.529
0.867	1.112	1.573	0.618	0.585	0.533	0.427	0.930	1.476	2.088	0.722	0.691	0.641	0.531
0.868	1.117	1.580	0.620	0.586	0.534	0.428	0.931	1.484	2.098	0.724	0.693	0.643	0.533
0.869	1.122	1.587	0.621	0.588	0.536	0.430	0.932	1.491	2.109	0.726	0.695	0.645	0.535
0.870	1.127	1.593	0.623	0.590	0.537	0.431	0.933	1.499	2.120	0.727	0.697	0.647	0.537
0.871	1.131	1.600	0.625	0.591	0.539	0.433	0.934	1.507	2.131	0.729	0.699	0.649	0.539
0.872	1.136	1.607	0.626	0.593	0.541	0.434	0.935	1.515	2.142	0.731	0.700	0.651	0.541
0.873	1.141	1.613	0.628	0.595	0.542	0.436	0.936	1.522	2.153	0.733	0.702	0.653	0.543
0.874	1.146	1.620	0.629	0.596	0.544	0.437	0.937	1.531	2.164	0.734	0.704	0.655	0.545
0.875	1.151	1.627	0.631	0.598	0.545	0.439	0.938	1.539	2.176	0.736	0.706	0.657	0.547
0.876	1.155	1.634	0.633	0.599	0.547	0.440	0.939	1.547	2.188	0.738	0.708	0.659	0.549

**Table 1.** Conversion of AUC into  $z$ , Cohen's  $d$ , and  $r_{pb}$  for Various Base Rates (continued)

AUC	$z$	$d$	$r_{pb}$ $p = .50$	$r_{pb}$ $p = .3 \& q = .7$	$r_{pb}$ $p = .2 \& q = .8$	$r_{pb}$ $p = .1 \& q = .9$	AUC	$z$	$d$	$r_{pb}$ $p = .50$	$r_{pb}$ $p = .3 \& q = .7$	$r_{pb}$ $p = .2 \& q = .8$	$r_{pb}$ $p = .1 \& q = .9$
0.940	1.555	2.199	0.740	0.710	0.661	0.551	0.970	1.881	2.661	0.799	0.773	0.729	0.624
0.941	1.564	2.211	0.742	0.712	0.663	0.553	0.971	1.896	2.682	0.802	0.776	0.731	0.627
0.942	1.572	2.224	0.743	0.714	0.665	0.555	0.972	1.912	2.703	0.804	0.778	0.734	0.630
0.943	1.581	2.236	0.745	0.716	0.667	0.557	0.973	1.927	2.726	0.806	0.781	0.737	0.633
0.944	1.590	2.248	0.747	0.718	0.669	0.559	0.974	1.944	2.749	0.809	0.783	0.740	0.636
0.945	1.599	2.261	0.749	0.720	0.671	0.561	0.975	1.961	2.773	0.811	0.786	0.743	0.639
0.946	1.608	2.274	0.751	0.721	0.673	0.563	0.976	1.978	2.797	0.813	0.788	0.746	0.643
0.947	1.617	2.287	0.753	0.723	0.675	0.566	0.977	1.996	2.823	0.816	0.791	0.749	0.646
0.948	1.626	2.300	0.755	0.725	0.677	0.568	0.978	2.015	2.849	0.818	0.794	0.752	0.650
0.949	1.636	2.313	0.756	0.727	0.679	0.570	0.979	2.034	2.877	0.821	0.797	0.755	0.653
0.950	1.645	2.327	0.758	0.729	0.681	0.572	0.980	2.054	2.905	0.824	0.800	0.758	0.657
0.951	1.655	2.341	0.760	0.731	0.683	0.575	0.981	2.075	2.935	0.826	0.803	0.761	0.661
0.952	1.665	2.355	0.762	0.733	0.686	0.577	0.982	2.098	2.966	0.829	0.806	0.765	0.665
0.953	1.675	2.369	0.764	0.736	0.688	0.579	0.983	2.121	2.999	0.832	0.809	0.768	0.669
0.954	1.685	2.384	0.766	0.738	0.690	0.582	0.984	2.145	3.034	0.835	0.812	0.772	0.673
0.955	1.696	2.398	0.768	0.740	0.692	0.584	0.985	2.171	3.070	0.838	0.815	0.775	0.677
0.956	1.707	2.413	0.770	0.742	0.695	0.586	0.986	2.198	3.108	0.841	0.818	0.779	0.682
0.957	1.717	2.429	0.772	0.744	0.697	0.589	0.987	2.227	3.149	0.844	0.822	0.783	0.687
0.958	1.728	2.444	0.774	0.746	0.699	0.591	0.988	2.258	3.193	0.847	0.826	0.787	0.692
0.959	1.740	2.460	0.776	0.748	0.701	0.594	0.989	2.291	3.240	0.851	0.829	0.792	0.697
0.960	1.751	2.477	0.778	0.750	0.704	0.596	0.990	2.327	3.291	0.855	0.833	0.796	0.703
0.961	1.763	2.493	0.780	0.752	0.706	0.599	0.991	2.366	3.346	0.858	0.838	0.801	0.708
0.962	1.775	2.510	0.782	0.755	0.709	0.602	0.992	2.410	3.408	0.862	0.842	0.806	0.715
0.963	1.787	2.527	0.784	0.757	0.711	0.604	0.993	2.458	3.476	0.867	0.847	0.812	0.722
0.964	1.800	2.545	0.786	0.759	0.713	0.607	0.994	2.513	3.554	0.871	0.852	0.818	0.729
0.965	1.812	2.563	0.788	0.761	0.716	0.610	0.995	2.576	3.644	0.877	0.858	0.825	0.738
0.966	1.826	2.582	0.791	0.764	0.718	0.612	0.996	2.653	3.751	0.882	0.864	0.832	0.748
0.967	1.839	2.601	0.793	0.766	0.721	0.615	0.997	2.748	3.887	0.889	0.872	0.841	0.759
0.968	1.853	2.620	0.795	0.768	0.724	0.618	0.998	2.879	4.071	0.898	0.881	0.852	0.774
0.969	1.867	2.640	0.797	0.771	0.726	0.621	0.999	3.091	4.371	0.909	0.895	0.868	0.795

Note. AUC = area under the normal curve;  $z$  = normal deviate of AUC based on the assumption that  $X$  is normally distributed in both groups;  $d$  = transformation  $z$  into Cohen's  $d$ ;  $r_{pb}$  = transformation of Cohen's  $d$  into point-biserial correlation;  $p$  = base rate or proportion of the treatment (experimental) group;  $q = 1 - p$ .



**Table 2.** Conversion of AUC into z, Cohen's d, Ln(OR) and OR Effect Sizes

AUC	z	d	LN(OR)	OR	AUC	z	d	LN(OR)	OR
0.500	0.000	0.000	0.000	1.000	0.567	0.168	0.238	0.432	1.540
0.501	0.003	0.004	0.007	1.007	0.568	0.171	0.242	0.439	1.551
0.502	0.005	0.007	0.013	1.013	0.569	0.174	0.245	0.445	1.561
0.503	0.008	0.011	0.019	1.020	0.570	0.176	0.249	0.452	1.571
0.504	0.010	0.014	0.026	1.026	0.571	0.179	0.253	0.458	1.581
0.505	0.013	0.018	0.032	1.033	0.572	0.181	0.256	0.465	1.592
0.506	0.015	0.021	0.039	1.039	0.573	0.184	0.260	0.471	1.602
0.507	0.018	0.025	0.045	1.046	0.574	0.186	0.263	0.478	1.612
0.508	0.020	0.028	0.051	1.053	0.575	0.189	0.267	0.484	1.623
0.509	0.023	0.032	0.058	1.060	0.576	0.191	0.271	0.491	1.634
0.510	0.025	0.035	0.064	1.066	0.577	0.194	0.274	0.497	1.644
0.511	0.028	0.039	0.071	1.073	0.578	0.196	0.278	0.504	1.655
0.512	0.030	0.042	0.077	1.080	0.579	0.199	0.281	0.511	1.666
0.513	0.033	0.046	0.083	1.087	0.580	0.202	0.285	0.517	1.677
0.514	0.035	0.050	0.090	1.094	0.581	0.204	0.289	0.524	1.688
0.515	0.038	0.053	0.096	1.101	0.582	0.207	0.292	0.530	1.699
0.516	0.040	0.057	0.103	1.108	0.583	0.209	0.296	0.537	1.710
0.517	0.043	0.060	0.109	1.115	0.584	0.212	0.300	0.543	1.722
0.518	0.045	0.064	0.116	1.123	0.585	0.214	0.303	0.550	1.733
0.519	0.048	0.067	0.122	1.130	0.586	0.217	0.307	0.556	1.744
0.520	0.050	0.071	0.128	1.137	0.587	0.219	0.310	0.563	1.756
0.521	0.053	0.074	0.135	1.144	0.588	0.222	0.314	0.570	1.768
0.522	0.055	0.078	0.141	1.152	0.589	0.225	0.318	0.576	1.779
0.523	0.058	0.081	0.148	1.159	0.590	0.227	0.321	0.583	1.791
0.524	0.060	0.085	0.154	1.167	0.591	0.230	0.325	0.589	1.803
0.525	0.063	0.089	0.161	1.174	0.592	0.232	0.329	0.596	1.815
0.526	0.065	0.092	0.167	1.182	0.593	0.235	0.332	0.603	1.827
0.527	0.068	0.096	0.173	1.189	0.594	0.237	0.336	0.609	1.839
0.528	0.070	0.099	0.180	1.197	0.595	0.240	0.340	0.616	1.851
0.529	0.073	0.103	0.186	1.205	0.596	0.243	0.343	0.622	1.863
0.530	0.075	0.106	0.193	1.213	0.597	0.245	0.347	0.629	1.876
0.531	0.078	0.110	0.199	1.220	0.598	0.248	0.350	0.636	1.888
0.532	0.080	0.113	0.206	1.228	0.599	0.250	0.354	0.642	1.901
0.533	0.083	0.117	0.212	1.236	0.600	0.253	0.358	0.649	1.914
0.534	0.085	0.120	0.218	1.244	0.601	0.256	0.361	0.656	1.926
0.535	0.088	0.124	0.225	1.252	0.602	0.258	0.365	0.662	1.939
0.536	0.090	0.128	0.231	1.260	0.603	0.261	0.369	0.669	1.952
0.537	0.093	0.131	0.238	1.268	0.604	0.263	0.372	0.676	1.965
0.538	0.095	0.135	0.244	1.277	0.605	0.266	0.376	0.682	1.978
0.539	0.098	0.138	0.251	1.285	0.606	0.269	0.380	0.689	1.991
0.540	0.100	0.142	0.257	1.293	0.607	0.271	0.383	0.696	2.005
0.541	0.103	0.145	0.264	1.302	0.608	0.274	0.387	0.702	2.018
0.542	0.105	0.149	0.270	1.310	0.609	0.276	0.391	0.709	2.032
0.543	0.108	0.152	0.277	1.319	0.610	0.279	0.394	0.716	2.045
0.544	0.110	0.156	0.283	1.327	0.611	0.282	0.398	0.722	2.059
0.545	0.113	0.160	0.289	1.336	0.612	0.284	0.402	0.729	2.073
0.546	0.115	0.163	0.296	1.344	0.613	0.287	0.406	0.736	2.087
0.547	0.118	0.167	0.302	1.353	0.614	0.289	0.409	0.742	2.101
0.548	0.120	0.170	0.309	1.362	0.615	0.292	0.413	0.749	2.115
0.549	0.123	0.174	0.315	1.371	0.616	0.295	0.417	0.756	2.129
0.550	0.125	0.177	0.322	1.380	0.617	0.297	0.420	0.762	2.144
0.551	0.128	0.181	0.328	1.388	0.618	0.300	0.424	0.769	2.158
0.552	0.130	0.185	0.335	1.398	0.619	0.302	0.428	0.776	2.173
0.553	0.133	0.188	0.341	1.407	0.620	0.305	0.431	0.783	2.187
0.554	0.136	0.192	0.348	1.416	0.621	0.308	0.435	0.789	2.202
0.555	0.138	0.195	0.354	1.425	0.622	0.310	0.439	0.796	2.217
0.556	0.141	0.199	0.361	1.434	0.623	0.313	0.443	0.803	2.232
0.557	0.143	0.202	0.367	1.444	0.624	0.316	0.446	0.810	2.247
0.558	0.146	0.206	0.374	1.453	0.625	0.318	0.450	0.816	2.262
0.559	0.148	0.210	0.380	1.462	0.626	0.321	0.454	0.823	2.278
0.560	0.151	0.213	0.387	1.472	0.627	0.324	0.458	0.830	2.293
0.561	0.153	0.217	0.393	1.482	0.628	0.326	0.461	0.837	2.309
0.562	0.156	0.220	0.400	1.491	0.629	0.329	0.465	0.843	2.324
0.563	0.158	0.224	0.406	1.501	0.630	0.331	0.469	0.850	2.340
0.564	0.161	0.227	0.413	1.511	0.631	0.334	0.473	0.857	2.356
0.565	0.163	0.231	0.419	1.521	0.632	0.337	0.476	0.864	2.372
0.566	0.166	0.235	0.426	1.530	0.633	0.339	0.480	0.871	2.389

**Table 2.** Conversion of AUC into z, Cohen's d, Ln(OR) and OR Effect Sizes (continued)

AUC	z	d	LN(OR)	OR	AUC	z	d	LN(OR)	OR
0.634	0.342	0.484	0.877	2.405	0.701	0.527	0.745	1.352	3.864
0.635	0.345	0.488	0.884	2.421	0.702	0.530	0.749	1.359	3.893
0.636	0.347	0.491	0.891	2.438	0.703	0.533	0.753	1.367	3.922
0.637	0.350	0.495	0.898	2.455	0.704	0.536	0.757	1.374	3.951
0.638	0.353	0.499	0.905	2.471	0.705	0.539	0.762	1.381	3.980
0.639	0.355	0.503	0.912	2.488	0.706	0.541	0.766	1.389	4.010
0.640	0.358	0.506	0.919	2.506	0.707	0.544	0.770	1.396	4.040
0.641	0.361	0.510	0.925	2.523	0.708	0.547	0.774	1.404	4.070
0.642	0.363	0.514	0.932	2.540	0.709	0.550	0.778	1.411	4.101
0.643	0.366	0.518	0.939	2.558	0.710	0.553	0.782	1.419	4.132
0.644	0.369	0.522	0.946	2.575	0.711	0.556	0.786	1.426	4.163
0.645	0.371	0.525	0.953	2.593	0.712	0.559	0.790	1.434	4.194
0.646	0.374	0.529	0.960	2.611	0.713	0.562	0.795	1.441	4.226
0.647	0.377	0.533	0.967	2.629	0.714	0.565	0.799	1.449	4.258
0.648	0.380	0.537	0.974	2.647	0.715	0.568	0.803	1.456	4.290
0.649	0.382	0.541	0.980	2.666	0.716	0.571	0.807	1.464	4.323
0.650	0.385	0.544	0.987	2.684	0.717	0.574	0.811	1.471	4.356
0.651	0.388	0.548	0.994	2.703	0.718	0.577	0.815	1.479	4.389
0.652	0.390	0.552	1.001	2.722	0.719	0.580	0.820	1.487	4.422
0.653	0.393	0.556	1.008	2.741	0.720	0.583	0.824	1.494	4.456
0.654	0.396	0.560	1.015	2.760	0.721	0.586	0.828	1.502	4.490
0.655	0.398	0.564	1.022	2.779	0.722	0.589	0.832	1.510	4.525
0.656	0.401	0.567	1.029	2.799	0.723	0.591	0.836	1.517	4.560
0.657	0.404	0.571	1.036	2.818	0.724	0.594	0.841	1.525	4.595
0.658	0.407	0.575	1.043	2.838	0.725	0.597	0.845	1.533	4.630
0.659	0.409	0.579	1.050	2.858	0.726	0.600	0.849	1.540	4.666
0.660	0.412	0.583	1.057	2.878	0.727	0.603	0.853	1.548	4.702
0.661	0.415	0.587	1.064	2.898	0.728	0.607	0.858	1.556	4.739
0.662	0.418	0.591	1.071	2.919	0.729	0.610	0.862	1.563	4.775
0.663	0.420	0.594	1.078	2.939	0.730	0.613	0.866	1.571	4.813
0.664	0.423	0.598	1.085	2.960	0.731	0.616	0.871	1.579	4.850
0.665	0.426	0.602	1.092	2.981	0.732	0.619	0.875	1.587	4.888
0.666	0.429	0.606	1.099	3.002	0.733	0.622	0.879	1.595	4.926
0.667	0.431	0.610	1.106	3.023	0.734	0.625	0.883	1.602	4.965
0.668	0.434	0.614	1.113	3.044	0.735	0.628	0.888	1.610	5.004
0.669	0.437	0.618	1.120	3.066	0.736	0.631	0.892	1.618	5.043
0.670	0.440	0.622	1.127	3.088	0.737	0.634	0.896	1.626	5.083
0.671	0.442	0.626	1.135	3.110	0.738	0.637	0.901	1.634	5.123
0.672	0.445	0.629	1.142	3.132	0.739	0.640	0.905	1.642	5.164
0.673	0.448	0.633	1.149	3.154	0.740	0.643	0.909	1.650	5.205
0.674	0.451	0.637	1.156	3.177	0.741	0.646	0.914	1.658	5.246
0.675	0.453	0.641	1.163	3.200	0.742	0.649	0.918	1.665	5.288
0.676	0.456	0.645	1.170	3.223	0.743	0.652	0.923	1.673	5.330
0.677	0.459	0.649	1.177	3.246	0.744	0.655	0.927	1.681	5.373
0.678	0.462	0.653	1.184	3.269	0.745	0.659	0.931	1.689	5.416
0.679	0.465	0.657	1.192	3.292	0.746	0.662	0.936	1.697	5.460
0.680	0.467	0.661	1.199	3.316	0.747	0.665	0.940	1.705	5.504
0.681	0.470	0.665	1.206	3.340	0.748	0.668	0.945	1.713	5.548
0.682	0.473	0.669	1.213	3.364	0.749	0.671	0.949	1.722	5.593
0.683	0.476	0.673	1.220	3.388	0.750	0.674	0.954	1.730	5.638
0.684	0.479	0.677	1.228	3.413	0.751	0.677	0.958	1.738	5.684
0.685	0.481	0.681	1.235	3.438	0.752	0.681	0.962	1.746	5.730
0.686	0.484	0.685	1.242	3.463	0.753	0.684	0.967	1.754	5.777
0.687	0.487	0.689	1.249	3.488	0.754	0.687	0.971	1.762	5.824
0.688	0.490	0.693	1.257	3.513	0.755	0.690	0.976	1.770	5.872
0.689	0.493	0.697	1.264	3.539	0.756	0.693	0.980	1.778	5.920
0.690	0.496	0.701	1.271	3.565	0.757	0.696	0.985	1.787	5.969
0.691	0.498	0.705	1.278	3.591	0.758	0.700	0.990	1.795	6.018
0.692	0.501	0.709	1.286	3.617	0.759	0.703	0.994	1.803	6.068
0.693	0.504	0.713	1.293	3.643	0.760	0.706	0.999	1.811	6.118
0.694	0.507	0.717	1.300	3.670	0.761	0.709	1.003	1.820	6.169
0.695	0.510	0.721	1.308	3.697	0.762	0.713	1.008	1.828	6.220
0.696	0.513	0.725	1.315	3.724	0.763	0.716	1.012	1.836	6.272
0.697	0.515	0.729	1.322	3.752	0.764	0.719	1.017	1.844	6.325
0.698	0.518	0.733	1.330	3.779	0.765	0.722	1.021	1.853	6.378
0.699	0.521	0.737	1.337	3.807	0.766	0.726	1.026	1.861	6.431
0.700	0.524	0.741	1.344	3.836	0.767	0.729	1.031	1.870	6.485

**Table 2.** Conversion of AUC into z, Cohen's d, Ln(OR) and OR Effect Sizes (continued)

AUC	z	d	LN(OR)	OR	AUC	z	d	LN(OR)	OR
0.768	0.732	1.035	1.878	6.540	0.835	0.974	1.378	2.499	12.168
0.769	0.735	1.040	1.886	6.595	0.836	0.978	1.383	2.509	12.295
0.770	0.739	1.045	1.895	6.651	0.837	0.982	1.389	2.520	12.424
0.771	0.742	1.049	1.903	6.708	0.838	0.986	1.395	2.530	12.554
0.772	0.745	1.054	1.912	6.765	0.839	0.990	1.401	2.541	12.686
0.773	0.749	1.059	1.920	6.823	0.840	0.995	1.406	2.551	12.821
0.774	0.752	1.063	1.929	6.881	0.841	0.999	1.412	2.562	12.957
0.775	0.755	1.068	1.937	6.940	0.842	1.003	1.418	2.572	13.095
0.776	0.759	1.073	1.946	7.000	0.843	1.007	1.424	2.583	13.236
0.777	0.762	1.078	1.954	7.060	0.844	1.011	1.430	2.594	13.378
0.778	0.765	1.082	1.963	7.121	0.845	1.015	1.436	2.604	13.523
0.779	0.769	1.087	1.972	7.183	0.846	1.020	1.442	2.615	13.669
0.780	0.772	1.092	1.980	7.246	0.847	1.024	1.448	2.626	13.818
0.781	0.775	1.097	1.989	7.309	0.848	1.028	1.454	2.637	13.970
0.782	0.779	1.101	1.998	7.373	0.849	1.032	1.460	2.648	14.123
0.783	0.782	1.106	2.007	7.437	0.850	1.037	1.466	2.659	14.279
0.784	0.786	1.111	2.015	7.503	0.851	1.041	1.472	2.670	14.438
0.785	0.789	1.116	2.024	7.569	0.852	1.045	1.478	2.681	14.599
0.786	0.793	1.121	2.033	7.636	0.853	1.050	1.484	2.692	14.762
0.787	0.796	1.126	2.042	7.703	0.854	1.054	1.490	2.703	14.928
0.788	0.799	1.131	2.051	7.772	0.855	1.058	1.497	2.715	15.097
0.789	0.803	1.135	2.059	7.841	0.856	1.063	1.503	2.726	15.269
0.790	0.806	1.140	2.068	7.911	0.857	1.067	1.509	2.737	15.443
0.791	0.810	1.145	2.077	7.982	0.858	1.072	1.515	2.749	15.620
0.792	0.813	1.150	2.086	8.054	0.859	1.076	1.522	2.760	15.800
0.793	0.817	1.155	2.095	8.126	0.860	1.080	1.528	2.771	15.982
0.794	0.820	1.160	2.104	8.200	0.861	1.085	1.534	2.783	16.168
0.795	0.824	1.165	2.113	8.274	0.862	1.089	1.541	2.795	16.357
0.796	0.827	1.170	2.122	8.349	0.863	1.094	1.547	2.806	16.549
0.797	0.831	1.175	2.131	8.426	0.864	1.099	1.554	2.818	16.745
0.798	0.834	1.180	2.140	8.503	0.865	1.103	1.560	2.830	16.943
0.799	0.838	1.185	2.150	8.581	0.866	1.108	1.567	2.842	17.145
0.800	0.842	1.190	2.159	8.660	0.867	1.112	1.573	2.854	17.351
0.801	0.845	1.195	2.168	8.739	0.868	1.117	1.580	2.866	17.560
0.802	0.849	1.200	2.177	8.820	0.869	1.122	1.587	2.878	17.773
0.803	0.852	1.205	2.186	8.902	0.870	1.127	1.593	2.890	17.989
0.804	0.856	1.210	2.196	8.985	0.871	1.131	1.600	2.902	18.209
0.805	0.860	1.216	2.205	9.069	0.872	1.136	1.607	2.914	18.434
0.806	0.863	1.221	2.214	9.154	0.873	1.141	1.613	2.926	18.662
0.807	0.867	1.226	2.224	9.240	0.874	1.146	1.620	2.939	18.894
0.808	0.871	1.231	2.233	9.327	0.875	1.151	1.627	2.951	19.130
0.809	0.874	1.236	2.242	9.415	0.876	1.155	1.634	2.964	19.371
0.810	0.878	1.241	2.252	9.505	0.877	1.160	1.641	2.976	19.616
0.811	0.882	1.247	2.261	9.595	0.878	1.165	1.648	2.989	19.866
0.812	0.885	1.252	2.271	9.687	0.879	1.170	1.655	3.002	20.120
0.813	0.889	1.257	2.280	9.780	0.880	1.175	1.662	3.015	20.379
0.814	0.893	1.262	2.290	9.874	0.881	1.180	1.669	3.027	20.643
0.815	0.896	1.268	2.299	9.969	0.882	1.185	1.676	3.040	20.912
0.816	0.900	1.273	2.309	10.066	0.883	1.190	1.683	3.053	21.187
0.817	0.904	1.278	2.319	10.163	0.884	1.195	1.691	3.066	21.466
0.818	0.908	1.284	2.328	10.262	0.885	1.201	1.698	3.080	21.751
0.819	0.912	1.289	2.338	10.363	0.886	1.206	1.705	3.093	22.041
0.820	0.915	1.295	2.348	10.465	0.887	1.211	1.713	3.106	22.338
0.821	0.919	1.300	2.358	10.568	0.888	1.216	1.720	3.120	22.640
0.822	0.923	1.305	2.368	10.672	0.889	1.221	1.727	3.133	22.948
0.823	0.927	1.311	2.378	10.778	0.890	1.227	1.735	3.147	23.262
0.824	0.931	1.316	2.387	10.885	0.891	1.232	1.742	3.161	23.583
0.825	0.935	1.322	2.397	10.994	0.892	1.238	1.750	3.174	23.911
0.826	0.938	1.327	2.407	11.104	0.893	1.243	1.758	3.188	24.245
0.827	0.942	1.333	2.417	11.216	0.894	1.248	1.765	3.202	24.586
0.828	0.946	1.338	2.427	11.329	0.895	1.254	1.773	3.216	24.934
0.829	0.950	1.344	2.437	11.444	0.896	1.259	1.781	3.230	25.290
0.830	0.954	1.349	2.448	11.561	0.897	1.265	1.789	3.245	25.653
0.831	0.958	1.355	2.458	11.679	0.898	1.271	1.797	3.259	26.024
0.832	0.962	1.361	2.468	11.799	0.899	1.276	1.805	3.274	26.404
0.833	0.966	1.366	2.478	11.920	0.900	1.282	1.813	3.288	26.791
0.834	0.970	1.372	2.489	12.043	0.901	1.288	1.821	3.303	27.188

**Table 2.** Conversion of AUC into *z*, Cohen's *d*, Ln(*OR*) and *OR* Effect Sizes (continued)

<i>AUC</i>	<i>z</i>	<i>d</i>	LN( <i>OR</i> )	<i>OR</i>	<i>AUC</i>	<i>z</i>	<i>d</i>	LN( <i>OR</i> )	<i>OR</i>
0.902	1.293	1.829	3.318	27.593	0.951	1.655	2.341	4.246	69.798
0.903	1.299	1.837	3.332	28.007	0.952	1.665	2.355	4.271	71.600
0.904	1.305	1.846	3.347	28.430	0.953	1.675	2.369	4.297	73.480
0.905	1.311	1.854	3.363	28.864	0.954	1.685	2.384	4.323	75.444
0.906	1.317	1.862	3.378	29.307	0.955	1.696	2.398	4.350	77.495
0.907	1.323	1.871	3.393	29.761	0.956	1.707	2.413	4.378	79.642
0.908	1.329	1.879	3.409	30.226	0.957	1.717	2.429	4.405	81.889
0.909	1.335	1.888	3.424	30.701	0.958	1.728	2.444	4.434	84.243
0.910	1.341	1.897	3.440	31.188	0.959	1.740	2.460	4.463	86.714
0.911	1.347	1.905	3.456	31.687	0.960	1.751	2.477	4.492	89.308
0.912	1.354	1.914	3.472	32.199	0.961	1.763	2.493	4.522	92.036
0.913	1.360	1.923	3.488	32.723	0.962	1.775	2.510	4.553	94.907
0.914	1.366	1.932	3.504	33.260	0.963	1.787	2.527	4.584	97.932
0.915	1.373	1.941	3.521	33.810	0.964	1.800	2.545	4.616	101.126
0.916	1.379	1.950	3.537	34.375	0.965	1.812	2.563	4.649	104.500
0.917	1.386	1.959	3.554	34.955	0.966	1.826	2.582	4.683	108.071
0.918	1.392	1.969	3.571	35.549	0.967	1.839	2.601	4.717	111.856
0.919	1.399	1.978	3.588	36.160	0.968	1.853	2.620	4.753	115.875
0.920	1.405	1.988	3.605	36.787	0.969	1.867	2.640	4.789	120.149
0.921	1.412	1.997	3.622	37.430	0.970	1.881	2.661	4.826	124.702
0.922	1.419	2.007	3.640	38.092	0.971	1.896	2.682	4.864	129.563
0.923	1.426	2.017	3.658	38.771	0.972	1.912	2.703	4.904	134.763
0.924	1.433	2.026	3.676	39.470	0.973	1.927	2.726	4.944	140.339
0.925	1.440	2.036	3.694	40.188	0.974	1.944	2.749	4.986	146.331
0.926	1.447	2.046	3.712	40.928	0.975	1.961	2.773	5.029	152.788
0.927	1.454	2.057	3.730	41.688	0.976	1.978	2.797	5.074	159.765
0.928	1.461	2.067	3.749	42.471	0.977	1.996	2.823	5.120	167.327
0.929	1.469	2.077	3.768	43.277	0.978	2.015	2.849	5.168	175.549
0.930	1.476	2.088	3.787	44.108	0.979	2.034	2.877	5.218	184.521
0.931	1.484	2.098	3.806	44.964	0.980	2.054	2.905	5.270	194.350
0.932	1.491	2.109	3.825	45.847	0.981	2.075	2.935	5.324	205.164
0.933	1.499	2.120	3.845	46.757	0.982	2.098	2.966	5.380	217.116
0.934	1.507	2.131	3.865	47.696	0.983	2.121	2.999	5.440	230.398
0.935	1.515	2.142	3.885	48.665	0.984	2.145	3.034	5.502	245.242
0.936	1.522	2.153	3.905	49.666	0.985	2.171	3.070	5.568	261.942
0.937	1.531	2.164	3.926	50.701	0.986	2.198	3.108	5.638	280.869
0.938	1.539	2.176	3.947	51.770	0.987	2.227	3.149	5.712	302.502
0.939	1.547	2.188	3.968	52.876	0.988	2.258	3.193	5.791	327.470
0.940	1.555	2.199	3.989	54.020	0.989	2.291	3.240	5.877	356.616
0.941	1.564	2.211	4.011	55.204	0.990	2.327	3.291	5.969	391.096
0.942	1.572	2.224	4.033	56.430	0.991	2.366	3.346	6.070	432.544
0.943	1.581	2.236	4.055	57.702	0.992	2.410	3.408	6.181	483.351
0.944	1.590	2.248	4.078	59.020	0.993	2.458	3.476	6.305	547.168
0.945	1.599	2.261	4.101	60.387	0.994	2.513	3.554	6.446	629.876
0.946	1.608	2.274	4.124	61.807	0.995	2.576	3.644	6.609	741.643
0.947	1.617	2.287	4.148	63.281	0.996	2.653	3.751	6.804	901.818
0.948	1.626	2.300	4.172	64.814	0.997	2.748	3.887	7.050	1152.734
0.949	1.636	2.313	4.196	66.409	0.998	2.879	4.071	7.384	1610.467
0.950	1.645	2.327	4.221	68.069	0.999	3.091	4.371	7.928	2774.328

Note. AUC = area under the normal curve; *z* = normal deviate of AUC based on the assumption that X is normally distributed in both groups; *d* = transformation *z* into Cohen's *d*; LN(*OR*) = transformation of Cohen's *d* into log natural of *OR*; *OR* = transformation of Cohen's *d* into *OR*.

## References

- Alonso, P., & Moscoso, S. (2017). Structured behavioral and conventional interviews: Differences and biases in interviewer ratings. *Journal of Work and Organizational Psychology*, 33. Available online first. <https://doi.org/10.1016/j.rpto.2017.07.003>
- Alonso, P., Moscoso, S., & Salgado, J. F. (2017). Structured behavioral interview as a legal guarantee for ensuring equal employment opportunities for women: A meta-analysis. *European Journal of Psychology Applied to Legal Context*, 9, 15-23. <https://doi.org/10.1016/j.ejpal.2016.03.002>
- Balaswamy, S., & Vardhan, R. V. (2015). Confidence interval estimation of a ROC curve: an application of generalized half normal and weibull distributions. *Journal of Probability and Statistics*, 1-8. <https://doi.org/10.1155/2015/934362>
- Block, J. J., & Crain, B. R. (2007). Omissions and errors in "Media Violence and the American Public". *American Psychologist*, 62, 252-253. <https://doi.org/10.1037/0003-066X.62.3.252>
- Bonnet, D. G. (2007). Transforming odds ratios into correlations for meta-analytic research. *American Psychologist*, 62, 254-255. <https://doi.org/10.1037/0003-066X.62.3.254>
- Borenstein, M., Hedges, L. V., Higgins, J. T. T., & Rothstein, H. R. (2009). *Introduction to meta-analysis*. New York: Wiley.
- Brophy, A. L. (1983). Accuracy and speed of seven approximations of the normal distribution function. *Behavior Research Methods, Instruments, & Computers*, 15, 604-605. <https://doi.org/10.3758/BF03203732>
- Brophy, A. L. (1985). Approximations of the inverse normal distribution function. *Behavior Research Methods, Instruments, & Computers*, 17, 415-417. <https://doi.org/10.3758/BF03200956>
- Bryc, W. (2002). A uniform approximation to the right normal tail integral. *Applied Mathematics and Computation*, 127, 365-374. [https://doi.org/10.1016/S0096-3003\(01\)00015-7](https://doi.org/10.1016/S0096-3003(01)00015-7)
- Card, N. A. (2012). *Applied meta-analysis for social science research*. New York: Guilford Press.
- Choudhury, A. (2014). A simple approximation to the area under the standard normal curve. *Mathematics and Statistics*, 23, 147-149. <https://doi.org/10.13189/ms.2014.02030>
- Cohen, J. (1977). *Statistical power analysis for the behavioral sciences*. Revised edition. Orlando, FL: Academic Press.
- Cooper, H., Hedges, L. V., & Valentine, J. C. (2009). *The handbook of research synthesis and meta-analysis*, 2<sup>nd</sup> edition. New York: Russell Sage Foundation.
- Emerson, P. L. (1979). Computer approximation of the inverse of the normal distribution function. *Behavior Research Methods, Instruments, & Computers*, 11, 397-398. <https://doi.org/10.3758/BF03205685>
- Fisher, R. A. (1956). On a test of significance in Pearson's Biometrika Tables (No.11). *Journal of the Royal Statistical Society. Series B (Methodological)*, 18, 56-60.
- Gescheider, G. A. (1976). *Psychophysics: Method and theory*. Hillsdale, NJ: Lawrence Erlbaum.
- Glass, G. V. (1976). Primary, secondary, and meta-analysis of research. *Educational Researcher*, 5, 3-8.
- Glass, G. V., McGraw, B., & Smith, M. L. (1981). *Meta-analysis in social research*. Beverly Hills, CA: Sage.
- Gray, R., Begg, C. B., & Greenes, R. A. (1984). Construction of receiver operating characteristic curves when disease verification is subject to selection bias. *Medical Decision Making*, 4, 151-164. <https://doi.org/10.1177/0272989X8400400204>
- Green, D. M., & Swets, J. A. (1974). *Signal detection theory and psychophysics*. New York: Wiley.
- Guilford, J. P., & Fruchter, B. (1978). *Fundamental statistics in psychology and education*. New York, NY: McGraw-Hill
- Hart, R. G. (1957). A formula for the approximation of the normal distribution function. *Mathematical Tables and other Aids to Computation*, 11, 60.
- Hart, R. G. (1966). A close approximation related to the error function. *Mathematics and Computation*, 20, 96.
- Hasselblad, V., & Hedges, L. V. (1995). Meta-analysis of screening and diagnostic tests. *Psychological Bulletin*, 117, 167-178. <https://doi.org/10.1037/0033-2909.117.1.67>
- Hedges, L. V., & Olkin, I. (1985). *Statistical methods for meta-analysis*. San Diego, CA: Academic Press.
- Humphreys, L. G., & Swets, J. A. (1991). Comparison of predictive validities measured biserial correlations and ROCs of signal detection theory. *Journal of Applied Psychology*, 76, 316-321. <https://doi.org/10.1037/0021-9010.76.2.316>
- Hunter, J. E., & Schmidt, F. L. (1990). *Methods of meta-analysis*. Newbury Park, CA: Sage.
- Kelley, K., & Preacher, K. J. (2012). On effect size. *Psychological Methods*, 17, 137-152. <https://doi.org/10.1037/a0028086>
- Krzanowski, W. J., & Hand, D. J. (2009). *ROC curves for continuous data*. New York, NY: Chapman & Hall.
- Lado, M., & Alonso, P. (2017). The Five-Factor model and job performance in low complexity jobs: A quantitative synthesis. *Journal of Work and Organizational Psychology*, 33. Available online first. <https://doi.org/10.1016/j.rpto.2017.07.004>
- Magnusson, D. (1967). *Test theory*. New York, NY: Addison-Wesley.
- Marzban, C. (2004). The ROC curve and the area under it as performance measures. *Weather and Forecasting*, 19, 1106-1114. <https://doi.org/10.1175/825.1>
- Mossmann, D. (1994). Assessing predictions of violence: Being accurate about accuracy. *Journal of Consulting and Clinical Psychology*, 62, 783-792. <https://doi.org/10.1037/0022-006X.62.4.783>
- Nunnally, J. (1978). *Psychometric Theory*. New York, NY: McGraw-Hill.
- Pearson, E. S., & Hartley, H. O. (Eds.). (1954). *Biometrika tables for statisticians*, Vol. 1 (1st ed.). Cambridge, UK: Cambridge University Press.
- Pearson, K. (1900). Mathematical contributions to the theory of evolution -VII: On the correlation characteristics not quantitatively measurable. *Philosophical Transactions of the Royal Society of London, Series, A*, 195, 1-147.
- Polya, G. (1945). Remarks on computing the probability integral in one and two dimensions. *Proceedings of the First Berkeley Symposium on Mathematical and Statistical Probability*, 63-78.
- Rice, M. E., & Harris, G. T. (2005). Comparing effect sizes in follow-up studies: ROC area, Cohen's *d*, and *r*. *Law and Human Behavior*, 29, 615-620. <https://doi.org/10.1007/s10979-005-6832-7>
- Rodríguez, A. (2016). Validez predictiva e impacto adverso de la entrevista conductual estructurada en el sector público. *Journal of Work and Organizational Psychology*, 32, 75-85. <https://doi.org/10.1016/j.rpto.2016.04.003>
- Rosenthal, R. (1991). *Meta-analytic procedures for social research*. Newbury Park, CA: Sage.
- Salgado, J. F. (2016). A theoretical model of psychometric effects of faking on assessment procedures: Empirical findings and implications for personality at work. *International Journal of Selection and Assessment*, 24, 209-228. <https://doi.org/10.1111/ijssa.12142>
- Salgado, J. F. (2017). Moderator Effects of Job Complexity on the Validity of Forced-choice Personality Inventories for Predicting Job Performance. *Journal of Work and Organizational Psychology*, 33, 165-174. <https://doi.org/10.1016/j.rpto.2017.07.001>
- Salgado, J. F., Moscoso, S., & Anderson, N. (2016). Corrections for criterion reliability in validity generalization: The consistency of Hermes, the utility of Midas. *Journal of Work and Organizational Psychology*, 32, 17-23. <https://doi.org/10.1016/j.rpto.2015.12.001>
- Sánchez-Meca, J., Marín-Martínez, F., & Chacón-Moscoso, S. (2003). Effect-size indices for dichotomized outcomes in meta-analysis. *Psychological Methods*, 8, 448-467. <https://doi.org/10.1037/1082-989X.8.4.448>
- Schmidt, F. L., & Hunter, J. E. (2015). *Methods of meta-analysis*, 3<sup>rd</sup> edition. Thousand Oaks, CA: Sage.
- Swets, J. A. (1973). The relative operating characteristic in Psychology. *Science*, 182, 990-1000. <https://doi.org/10.1126/science.182.4116.990>
- Swets, J. A. (1986a). Indices of discrimination or diagnostic accuracy: Their ROCs and implied models. *Psychological Bulletin*, 99, 100-117. <https://doi.org/10.1037/0033-2909.99.1.100>
- Swets, J. A. (1986b). Form of empirical ROCs in discrimination and diagnostic tasks: Implication for theory and measurement of performance. *Psychological Bulletin*, 99, 181-198. <https://doi.org/10.1037/0033-2909.99.2.181>
- Swets, J. A., Dawes, R. M., & Monahan, J. (2000). Psychological science can improve diagnostic decisions. *Psychological Science in the Public Interest*, 1, 1-26. <https://doi.org/10.1111/1529-1006.001>
- Tanner, W. P., & Swets, J. A. (1954). A decision-making theory of visual detection. *Psychological Review*, 61, 401-409. <https://doi.org/10.1037/h0058700>
- Wilkinson, L. (1999). Statistical methods in psychology journals: Guidelines and explanations. *American Psychologist*, 54, 594-604. <https://doi.org/10.1037/0003-066X.54.8.594>
- Yerukala, R., & Boiroju, N. K. (2015). Approximations to standard normal distribution. *International Journal of Scientific & Engineering Research*, 6, 515-518.
- Zelen, M., & Severo, N. C. (1964). Probability functions. In M. Abramowitz & I. A. Stegun (Eds.), *Handbook of mathematical functions* (pp. 925-955). Washington, DC: US Government Printing Office.